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ISASS AP 2023

2023 Annual Meeting of
the International Society for the
Advancement of Spine Surgery,
Asia-Pacific Section

AUGUST 16(Wed) - 19(Sat), 2023
CONRAD SEOUL HOTEL, SEOUL, KOREA



PROGRAM
BOOK



Seok Woo Kim
President of
ISASS AP 2023



Keung Nyun Kim
President of
ISASS AP 2023

Supported by



Hosted by



AnyPlus[®]

3D printing
PLIF cage



Smooth Wedge-Shaped Design

: Easy Insertion

Minimized Sharp Edge

: Designed smooth edge for minimizing damage

Bullet-tip Nose

: The nose designed easy to rotational insertion

Interconnected Irregular Porous Structure

: Irregular porous structure provide optimized cellular adhesion and proliferation

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WELCOME MESSAGE

Dear Colleagues and Friends,

We are pleased to invite you to the 2023 Annual Meeting of the International Society for the Advancement of Spine Surgery, Asia-Pacific Section (ISASS AP 2023), hosted by the Korean Society for the Advancement of Spine Surgery (KOSASS), ISASS Korea Chapter, from August 16 to 19, 2023, at Conrad Seoul Hotel in Korea.

Since its foundation in 2004, the KOSASS, a group of orthopedists and neurosurgeons, has been dedicated to the advancement of spine surgery through the continued research and training of surgeons, achieving remarkable academic and technical growth over the past 20 years. As the Korea Chapter of the ISASS, we successfully held APSAS8 (1st Asia Pacific Conference) in 2008 and are now excited to welcome you to our 2nd meeting in Korea.

Though ISASS AP was postponed twice due to the pandemic, we strongly believe this will not only be an excellent opportunity to share invaluable experience and insights to propel the field of spine surgery beyond Asia, but also a timely event for all orthopedic surgeons and neurosurgeons from all over the world to unite and collaborate again after the absence due to the pandemic.

This year's AP meeting will attract over 500 experts from 20 countries. The over 270 abstracts we have received will make for a rich scientific program comprised of 54 sessions with plenary lectures, symposia and free papers featuring Robotics, Endoscopy, ERAS, Master's Techniques, Complications, MIS fusion, Deformity, and Outpatient Surgery as topics. We also have prepared an endoscopic cadaver workshop as a pre-meeting course as well as an international observer fellowship program is planning, so young surgeons can learn the A to Z of endoscopic surgery. In addition, over 50 exhibitors from medical device companies will share their latest innovations from the forefront of spine technology.

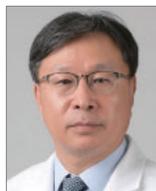
Our host city, Seoul, is a sensation! With a history stretching back more than two thousand years, Seoul's downtown area is home to historic 600-year-old city walls, royal palaces, fortress gates, and invaluable historical heritages. One of the largest modern metropolises in the world, Seoul is considered a leading and rising global star as the world's most wired, ranked first in technology readiness. While you are in Seoul, we hope you enjoy all the culture, food, and entertainment that this marvelous city has to offer.

We wish you have a good time at ISASS AP 2023!

Sincerely yours,



Seok Woo Kim
President of ISASS AP 2023



Keung Nyun Kim
President of ISASS AP 2023

PRESIDENTIAL ADDRESS & KEYNOTE ADDRESS

AUGUST 17 (Thursday), 10:35 - 11:15 ROOM A+B



PRESIDENTIAL ADDRESS

10:35 - 10:50

Seok Woo Kim

President of ISASS AP 2023



PRESIDENTIAL ADDRESS

10:50 - 10:55

Keung Nyun Kim

President of ISASS AP 2023



KEYNOTE ADDRESS

10:55 - 11:05

Michael Y. Wang

President of ISASS



INTRODUCTION OF IJSS

11:05 - 11:15

Charles L. Branch

Editor-in-Chief of IJSS

INVITED SPEAKERS & CHAIRS FROM ISASS



Massimo Balsano
University and Hospital Trust,
Italy



Ali Araghi
The Core Institute,
USA



Jack Zigler
Texas Back Institute,
USA



Huilin Yang
The First Affiliated Hospital of
Soochow University, China



Hansen A. Yuan
SUNY Upstate Medical University,
USA



Anthony Yeung
Desert Institute for Spine Care,
USA



Juan Uribe
Barrow Neurological Institute,
USA



Neel Anand
Cedars-Sinai Spine Center,
USA



Richard Hynes
The B.A.C.K. Center,
USA



Sheeraz Qureshi
Weill Cornell Medical College,
Cornell University, USA

INVITED SPEAKERS AND CHAIRS



Han Jo Kim
Hospital for Special Surgery,
USA



Paul Park
University of Tennessee Health
Science Center, USA



Scott Blumenthal
Texas Back Institute,
USA



Stephen Ryu
Stanford University Medical
Center, USA



Luthfi Gatam
Eka Hospital BSD,
Indonesia



Mathan Sakti Yudha
Gadjah Mada University,
Indonesia



Fan Tao
Capital Medical University,
China



Hee Kit Wong
National University of
Singapore, Singapore



Naresh Kumar
National University Hospital,
Singapore



Gabriel Liu Ka Po
National University Hospital,
Singapore



Jacob Oh
Tan Tock Seng Hospital,
Singapore



John Yunseo Choi
Spine Ortho Clinic,
Australia



David Edis
Victorian Orthopaedic Spine
Service, Australia



Christian Mazel
University Paris Nord
Sorbonne, France



Yoshihisa Kotani
Kansai Medical University
Medical Center,
Japan



Toshiki Endo
Tohoku Medical and
Pharmaceutical University,
Japan



Wataru Narita
Kameoka City Hospital,
Japan



Pham Anh Tuan
Nguyen Tri Phuong Hospital,
Vietnam



Tien Nguyen Le Bao
Viet Duc Hospital,
Vietnam



Shah Alam
Bangladesh Spine and
Orthopedic Hospital,
Bangladesh

INVITED SPEAKERS AND CHAIRS



Kai-Uwe Lewandrowski
Center for Advanced Spine
Care of Southern Arizona,
USA



Claudius Thomé
Medical University Innsbruck,
Germany



Muhammad Tariq Sohail
Doctors Hosp. & Medical Ctr.,
Pakistan



Keng-Chang Liu
Dalin Tzu Chi General
Hospital, Taiwan



Ruey-Mo Lin
Tainan Municipal An-Nan
Hospital, China Medical
University, Taiwan



Yen-Mou Lu
Kaohsiung Medical University
Hospital, Taiwan



Yung-Hsiao Chiang
Taipei Medical University
Hospital, Taiwan



Warat Tassanawipas
Praram 9 Hospital,
Thailand



Vit Kotheeranurak
Chulalongkorn University &
King Chulalongkorn Memorial
Hospital, Thailand



Worawat Limthongkul
Chulalongkorn University,
Thailand



Weerasak Singhatanadgige
King Chulalongkorn Memorial
Hospital, Thailand



Chan Shik Shim
Wooridul Spine Centre,
Healthpoint Hospital,
UAE

SYMPOSIUM SPEAKERS



Byung-Wan Choi
Inje University College of
Medicine, Korea



Chang-Il Ju
Chosun University College of
Medicine, Korea



Cheol Wung Park
Daejeon Woori Hospital,
Korea



Dae-Chul Cho
Kyungpook National
University School of Medicine,
Korea



Dae-Jung Choi
Himnaera Hospital,
Korea



Dong Hwa Heo
Champondonamu Hospital,
Korea



Gun Woo Lee
Yeungnam University
College of Medicine,
Korea



Hyoungmin Kim
Seoul National University
College of Medicine,
Korea



Hyun-Jin Park
Hallym University
College of Medicine,
Korea



Jae Chul Lee
Soonchunhyang University
College of Medicine,
Korea



Jae Hwan Cho
University of Ulsan College of
Medicine, Korea



Jae Taek Hong
The Catholic University of
Korea College of Medicine,
Korea



Jae-Hyuk Yang
Korea University
College of Medicine,
Korea



Jae-Young Hong
Korea University
College of Medicine,
Korea



Jeong-Yoon Park
Yonsei University College of
Medicine, Korea



Joo Han Kim
Korea University
College of Medicine,
Korea



Ju-Eun Kim
Baroseomyeon Hospital,
Korea



Junseok Bae
Wooridul Spine Hospital,
Korea



Jun-Seok Lee
The Catholic University of
Korea College of Medicine,
Korea



Keun Su Kim
Yonsei University
College of Medicine,
Korea

SYMPOSIUM SPEAKERS



Sam Yeol Chang
Seoul National University
College of Medicine,
Korea



Sang-Bum Kim
Chungnam National University
College of Medicine,
Korea



Sang-Min Park
Seoul National University
College of Medicine,
Korea



Seok-Bong Jung
Jinju Bon Hospital,
Korea



Seong Yi
Yonsei University College of
Medicine, Korea



Seung Won Park
Chung-ang University
College of Medicine,
Korea



Sun Ho Lee
Sungkyunkwan University
School of Medicine,
Korea



Sung Bae Park
Seoul National University
College of Medicine,
Korea



Sung Bum Kim
Kyung Hee University
School of Medicine,
Korea



Tae-Keun Ahn
CHA University School of
Medicine, Korea



Young-Yul Kim
The Catholic University of
Korea College of Medicine,
Korea



Yung Park
National Health Insurance
Service Ilsan Hospital,
Korea

AUGUST 17 (Thursday)

Time	Room A	Room B	Room C
	Grand Ballroom 3 (3F)	Grand Ballroom 2 (3F)	Park Ballroom 3 (5F)
07:00-07:45	Registration Opens		
	Continental Breakfast with Exhibits (5F, Lobby) *ISASS Member Meeting (5F, Park Studio - Meeting Room)		
07:45-08:00	Opening Ceremony		
08:00-08:30	[FP 01] Adult Spinal Deformity 1	[FP 02] Endoscopic Technologies & Techniques 1	[FP 03] MIS 1
08:30-09:00	[FP 04] Adult Spinal Deformity 2	[FP 05] Endoscopic Technologies & Techniques 2	[FP 06] MIS 2
09:00-10:15	[SY 01] Adult Sagittal Imbalance	[SY 02] What You Should Know: How to Maximize the Effects of MIS Fusion	
10:15-10:35	Refreshment Break with Exhibits (5F, Lobby)		
10:35-11:15	Presidential Address & Keynote Address		
11:15-12:35	[PL 01] MIS Surgery for ASD (Adult Spinal Deformity)		
12:35-12:50	Group Photo		
12:50-13:50	[LS 01] Luncheon 1 	[LS 02] Luncheon 2 	[LS 03] Luncheon 3 
13:50-15:05	[SY 03] Current Issues of Deformity Surgery	[SY 04] MIS Fusion: What's New? What's Coming?	
15:05-15:25	Refreshment Break with Exhibits (5F, Lobby)		
15:25-15:55	[BPO1] Best Paper 1	[BPO2] Best Paper 2	[FP 07] Miscellaneous 1
15:55-16:25			[FP 08] Miscellaneous 2
16:25-16:55	[FP 09] Trauma, Tumor & Infection 1	[FP 10] Biomechanics	[FP 11] Miscellaneous 3
16:55-17:25	[FP 12] Trauma, Tumor & Infection 2	[FP 13] Value, Outcomes & Healthcare Economics	[FP 14] Miscellaneous 4
17:30	Welcome Reception STUDIO 1+2+3 (6F)		

AUGUST 18 (Friday)

Time	Room A	Room B	Room C
	Grand Ballroom 3 (3F)	Grand Ballroom 2 (3F)	Park Ballroom 3 (5F)
07:00-08:00	Registration Opens		
	Continental Breakfast with Exhibits (5F, Lobby)		
08:00-08:30	[FP 15] Trauma, Tumor & Infection 3	[FP 16] Endoscopic Technologies & Techniques 3	[FP 17] MIS 3
08:30-09:00	[FP 18] Emerging Technologies & Techniques 1	[FP 19] Endoscopic Technologies & Techniques 4	[FP 20] MIS 4
09:00-10:15	[SY 05] Long Term Follow Up of ADR (Artificial Disc Replacement)	[SY 06] Endoscopic Decompression for Complex Spinal Pathologies: Current State of the Art	
10:15-10:35	Refreshment Break with Exhibits (5F, Lobby)		
10:35-11:55	[PL 02] Navigation and Robotics: Present and Future		
11:55-12:10	Group Photo		
12:10-13:10	[LS 04] Luncheon 4 	[LS 05] Luncheon 5 Medtronic	[LS 06] Luncheon 6 
13:10-14:40	[SY 07] Update of Disc Arthroplasty	[SY 08] Future Applications of Endoscopic Spine Surgery: What We Have and What Lies Ahead	
14:40-14:45	Break		
14:45-16:00	[SY 09] Advances in Spinal Tumor: What's New? What's Coming?	[SY 10] Cutting Edge of Novel Technology in Spine Surgery	[FP 21] (14:45-15:15) Miscellaneous 5
			[FP 22] (15:15-15:45) Cervical Degenerative 1
			[FP 23] (15:45-16:15) Cervical Degenerative 2
			[FP 24] (16:15-16:45) Lumbar Degenerative 1
			[FP 25] (16:45-17:15) Lumbar Degenerative 2
17:00	Cocktail Reception Lobby (3F)		
18:00	Gala Dinner Room A+B (3F)		

AUGUST 19 (Saturday)

Time	Room A	Room B
	Grand Ballroom 3 (3F)	Grand Ballroom 2 (3F)
07:00-08:00	Registration Opens	
	Continental Breakfast with Exhibits (3F, Lobby)	
08:00-08:30	[FP 26] Cervical Degenerative 3	[FP 27] Emerging Technologies & Techniques 2
08:30-09:00	[FP 28] Cervical Degenerative 4	[FP 29] Emerging Technologies & Techniques 3
09:00-09:30	Refreshment Break with Exhibits	
09:30-10:45	[SY 11] Osteobiologics for Spine fusion	[SY 12] Evolution and Development of Interbody Fusion
10:45-11:15	[FP 30] Lumbar Degenerative 3	[FP 31] Endoscopic Technologies & Techniques 5
11:15-11:45	[FP 32] Lumbar Degenerative 4	[FP 33] MIS 5
11:45-12:00	Adjourn	

VENUE INFORMATION

CONRAD SEOUL HOTEL

Address | 10 Gukjegeumyung-ro Yeouido Yeongdeungpo-gu, Seoul, 07326, South Korea

Contact | Tel. +82-2-6137-7000

Email | Conrad_Seoul@conradhotels.com

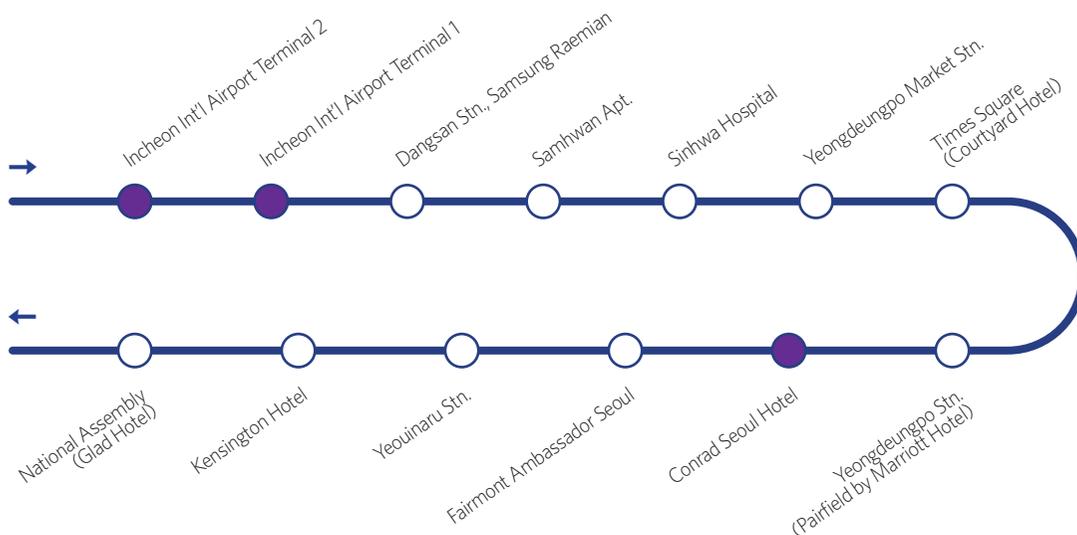
HOW TO GET TO THE VENUE FROM AIRPORT

Taxi

Type	Estimated Fare	Board		Note
		Terminal 1	Terminal 2	
Regular Taxi	KRW 60,000-80,000	5C / 6C / 6D	5C	Estimated Travel Time: 50 ~ 60min.
First Class / Oversized Taxi (Up to 9)	KRW 80,000-100,000	7C / 8C	5D	

Bus

Bus No.	Fare	Board		Interval	Destination
		Terminal 1	Terminal 2		
6007	KRW 17,000	6B-1 (1st Floor)	27 (Floor B1)	50 ~ 70 min.	Conrad Seoul Hotel



VENUE INFORMATION

AREX (Airport Railroad Express)

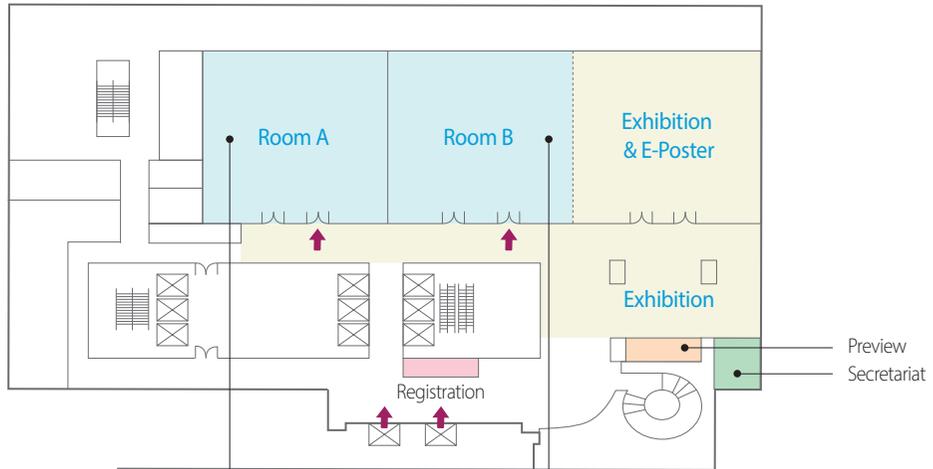
Steps	Line	Fare		Dpt. Station		Arv. Station
		Terminal 1	Terminal 2	Terminal 1	Terminal 2	
Step 1. Board	Airport Railroad (Blue-green)	Ticket: KRW 4,150	Ticket: KRW 4,750	Incheon Intl. Airport Terminal 1	Incheon Intl. Airport Terminal 2	Gongdeok
Step 2. Transfer	Subway Line 5 (Purple)			Gongdeok		Yeouido

FLOOR INFORMATION

Floor	Function	
37F	37 Grill & Bar	Presidential Banquet
11F - 36F	Guest Rooms	
8F - 9F	Facilities	
6F	Studio	Welcome Reception (Studio 1+2+3)
5F	Park Ballroom	Room C, Meeting Room Exhibition (Bronze-Exhibitor) Coffee Break (Aug. 17 - 18)
3F	Grand Ballroom	Room A/B, E-Poster, Registration, Preview Exhibition (Diamond-Bronze) Gala Dinner (Room A+B) Coffee Break (Aug. 19)
2F	Restaurant	
GL	Lobby	
L1	IFC Mall	Passageway from subway to hotel
P7 - P5	Parking	Free parking available

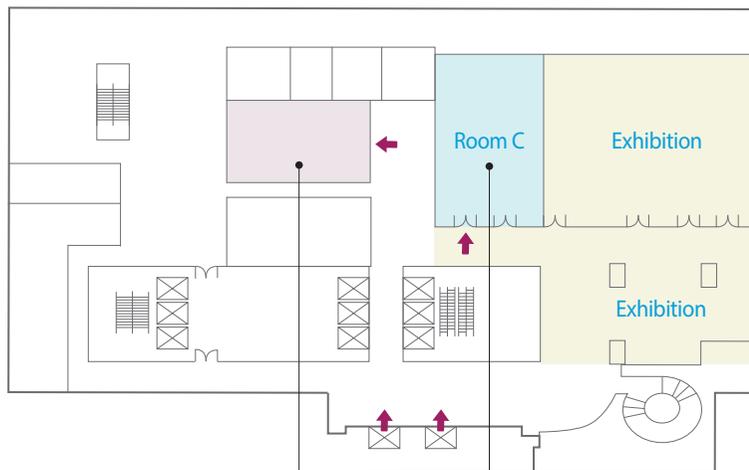
VENUE INFORMATION

3F



- Opening Ceremony
 - Presidential & Keynote Address
 - Plenary Lecture
 - Symposium
 - Luncheon
 - Best Paper
 - Free Paper
 - Gala Dinner
 - Adjourn
- Presidential & Keynote Address
 - Plenary Lecture
 - Symposium
 - Luncheon
 - Best Paper
 - Free Paper
 - Gala Dinner

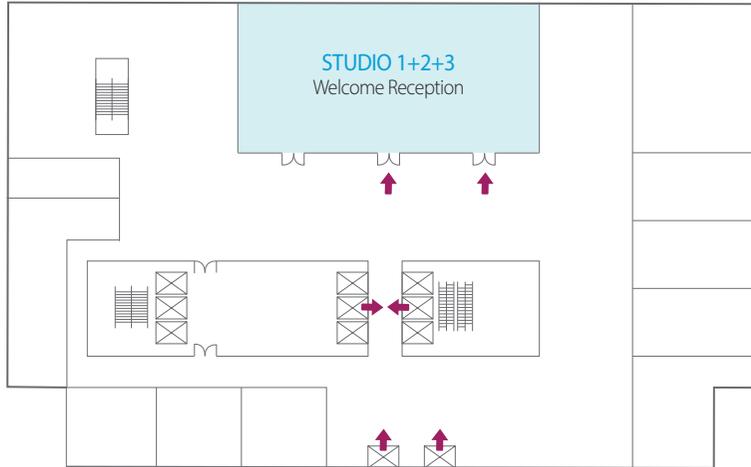
5F



- Free Paper
- Luncheon

VENUE INFORMATION

6F



ATTENDEE INFORMATION

REGISTRATION

All participants are required to check in at the registration desk to pick up their name badge.

Location | 3F, Lobby (By the elevator)

Operation Hours | August 17 (Thu) - August 18 (Fri) 07:00 - 18:00

August 19 (Sat) 07:00 - 12:00

On-site Registration Fees

Category	Korean	Overseas
Surgeon	KRW 300,000	USD 300
Allied Health (PA, NP, etc.)		
Resident/ Fellow/ Student	KRW 150,000	USD 150
Spouse/ Family Member		
Surgeon - Emerging Country		

- Registration Fees include: Participation in all scientific sessions, exhibitions, lunch box during luncheon symposium, coffee breaks, conference kit, welcome reception and gala dinner (for pre-registered participants only).

- Conference Kit will be distributed with your name badge at the registration desk. The kit includes a bag, program book and exhibition flyer.

LUNCH AND COFFEE BREAK

Luncheon Symposium

Lunch boxes will be served in the luncheon symposium session rooms. Please present your lunch coupon to receive a lunch box.

Luncheon	LS 01	LS 02	LS 03
Date/ Time	August 17 (Thu), 12:50-13:50		
Place	3F Room A	3F Room B	5F Room C
Sponsored by	 VIATRIS	 CGBIO CELL & GROWTH FACTOR BIOTECHNOLOGY	 SpinoTech Co., Ltd.

ATTENDEE INFORMATION

Luncheon	LS 04	LS 05	LS 06
Date/ Time	August 18 (Fri), 12:10-13:10		
Place	3F Room A	3F Room B	5F Room C
Sponsored by	 GS Medical	 Medtronic	 DONG-A ST

Coffee Breaks

Coffee will be served during refreshment break times on the 5F, August 17 (Thu) – August 18 (Fri) and 3F, August 19 (Sat).

CERTIFICATE OF ATTENDANCE OR PRESENTATION

The certificate of attendance can be downloaded from the ISASS AP 2023 website after the conference. The certificate of presentation can be issued after the conference by email. Please send a request to the secretariat (info@isassap.org) with your name, affiliation and presentation code.

CME CREDIT INFORMATION (Korean Only)

대한의사협회 평점

등록대에서 수령한 명찰에 인쇄된 바코드를 리더기에 태그해 주시기 바랍니다. (대회장 입장 시 1회, 퇴장 시 1회 (1일 총 2회 이상) 태그 필수)

일자별 최대 취득가능 평점 안내

8월 17일(목)	8월 18일(금)	8월 19일(토)
6점	6점	3점

부분 평점 인정 기준 안내

기준	평점	기준	평점
1시간 미만	평점 인정 불가	4시간 이상 – 5시간 미만	4평점
1시간 이상 – 2시간 미만	1평점	5시간 이상 – 6시간 미만	5평점
2시간 이상 – 3시간 미만	2평점	6시간 이상	6평점
3시간 이상 – 4시간 미만	3평점		

PARKING

Free parking is available by providing your parking information at the registration desk.

ATTENDEE INFORMATION

What to Do & What to See in Seoul!

NEAR THE VENUE

Yeouido Hangang Park

Situated in Seoul's center of politics, finance, and media, Yeouido Hangang Park is one of the most popular spots for relaxation among Seoul residents.

63 Building Observatory (63 Art)

The 60th floor of the 63 Building has long been loved as a place where you can see the outstanding scenery of Seoul around the Han River.

National Assembly Building

The National Assembly Building houses Korea's legislative branch of government and is located in Yeouido.

Shopping Malls

IFC Mall | Connected to the Conrad Seoul Hotel, the IFC Mall is a spacious indoor shopping center. Shoppers can browse from a diverse range of stores that sell apparel, cosmetics, international designer brands, and more.

The Hyundai Seoul | The Hyundai Seoul, the largest shopping mall in Seoul, offers visitors a relaxing shopping experience with 49% of its entire property dedicated to recreational areas.



EXPERIENCING SEOUL

Gyeongbokgung Palace

Gyeongbokgung Palace was the first royal palace built by the Joseon Dynasty, three years after the Joseon Dynasty was founded.

Dongdaemun Design Plaza (DDP)

DDP was selected as one of the "Top 52 Places to Visit in 2015" by the New York Times and was the most Instagram tagged location in Korea in the year 2015.

ATTENDEE INFORMATION

Insa-dong

Insa-dong, located in the heart of the city, is an important place where old but precious, traditional goods are on sale.

Cheonggyecheon Stream

Cheonggyecheon is a 10.9-kilometre-long (6.8 mi), public, recreation space in downtown Seoul. The massive urban renewal project is on the site of a stream that flowed before the rapid post-war economic development caused it to be covered by transportation infrastructure.



Useful Travel Website

- Seoul City Tourism: <http://www.visitseoul.net>
- Korean Tourism Organization: <http://kto.visitkorea.or.kr/eng.kto>
- Seoul Metropolitan Government: <http://english.seoul.go.kr>

SPEAKERS AND CHAIRS GUIDELINES

PREVIEW ROOM

Please submit your presentation file to the Preview Room at least 1 hours prior to your scheduled session to ensure the files function correctly in the given environment.

Location | 3F, Lobby

Operation Hours | August 17 (Thu) – August 18 (Fri) 07:00 – 17:00
August 19 (Sat) 07:00 – 11:00

- The staff will help you submit the presentation file. Please notify the staff in the Preview Room if the slides contain any video or audio.
- Preview Room is only available for submitting and checking files (No personal or other internet use).
- It is not recommended that you connect your personal laptop directly to the podium because it may cause errors. (Please also note that connecting a pad or mobile to the screen directly is not possible).
- If you need to connect your personal laptop due to unavoidable circumstances, please let the staff in the preview room know in advance. (For MacBooks, you must have a USB-C type adapter.)

SPEAKER GUIDELINES

- Speakers should be present in the session room 10 minutes prior to the session time.
- To avoid time delays, speakers should keep the time allocated to them.
- When your presentation ends, please be seated on the panel seat on the stage for the next presentation.

CHAIR GUIDELINES

- Chairs are kindly requested to be in the room at least 10 minutes before the session.
- Please run the session as scheduled for smooth progress. (It may be helpful for chairs to notify the presentation time (including Q&A) to speakers once again before they begin. Please also help the speaker to finish the presentation on time.)
- During the Discussion, we request you encourage participants to ask brief questions, voluntarily.
- If a speaker is absent or late, the staff in the session room will notify the chairs in advance.

SOCIAL EVENTS

OPENING CEREMONY

- **August 17 (Thu), 07:45 - 08:00**
- **3F, Room A**

We warmly welcome all our participants from all around the world.

WELCOME RECEPTION

- **August 17 (Thu), 17:30 -**
- **6F, STUDIO 1+2+3**

This will be a perfect opportunity for all participants to meet and greet each other and celebrate the first day of ISASS AP 2023.

* Attire: Business casual

PRESIDENTIAL BANQUET (Invited Only)

- **August 17 (Thu), 18:30 -**
- **37F, 37 Grill & Bar**

Respected spine doctors from around the world will gather to celebrate the inauguration of ISASS AP 2023 and share visions for our future development.

* Attire: Business casual

GALA DINNER

- **August 18 (Fri), 18:00 -**
- **3F, Room A+B**

Come and take part in the highlights of ISASS AP 2023 and enjoy a fabulous evening with world leading faculty. During the Cocktail Reception (17:00-18:00), we are hosting a Photo Zone event. Preserve your memories at ISASS AP 2023 with a snapshot.

* Attire: Business casual

ADJOURN

- **August 19 (Sat), 11:45 - 12:00**
- **3F, Room A**

We will wrap up the ISASS AP 2023. Also, the two best podium presentations (One from each best paper session) will be announced and awarded at the Adjournment.



SPONSORS

DIAMOND

Medtronic

PLATINUM



GOLD



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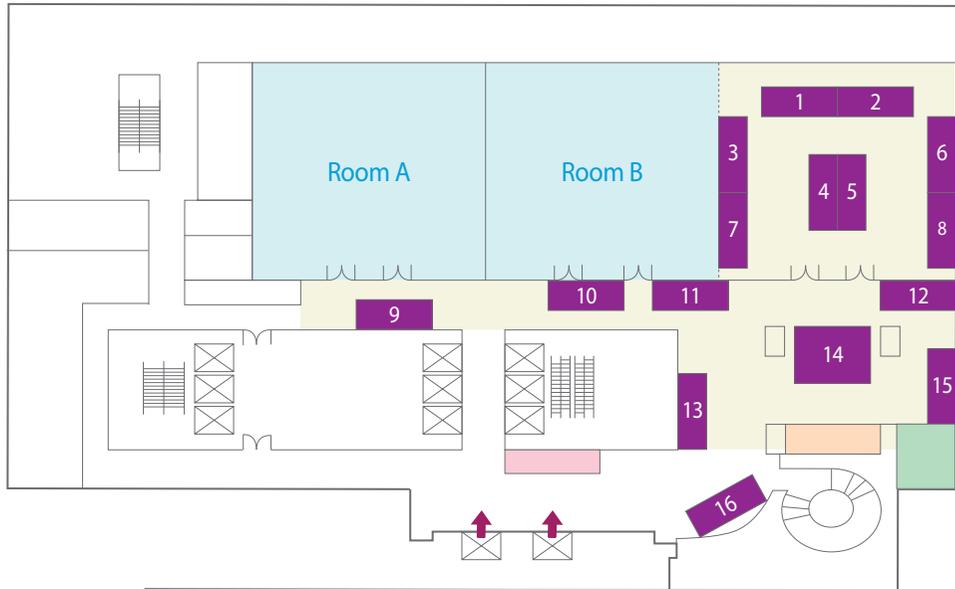
EXHIBITOR



BOOTH LAYOUT

3F

Operation Hours | August 17 (Thu) - August 18 (Fri) 07:00 - 18:00
 August 19 (Sat) 07:00 - 12:00

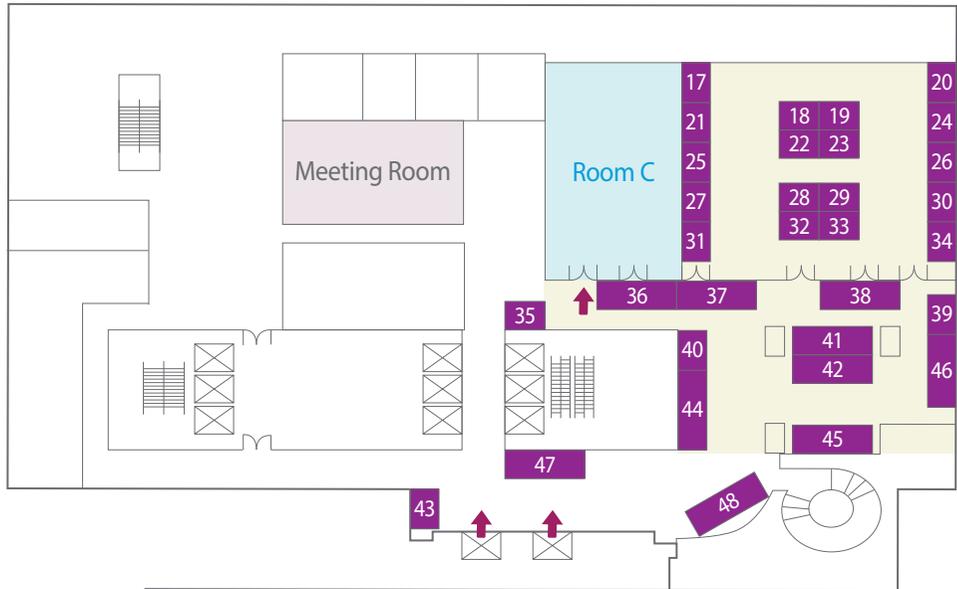


- | | |
|-------------------------|---------------------------------|
| 1 ZEISS KOREA | 9 Viatris Korea |
| 2 CUREXO | 10 CGbio |
| 3 Baxter Healthcare | 11 GS Medical |
| 4 HK inno.N Corporation | 12 SAMIL PHARMACEUTICAL CO.,LTD |
| 5 Amgen Korea | 13 Dong-A ST |
| 6 Dalimmedical | 14 Medtronic Korea |
| 7 Hanmi Pharm.Co.,Ltd. | 15 SpinoTech Co., Ltd. |
| 8 Janssen Korea | 16 DAEWON PHARM |

BOOTH LAYOUT

5F

Operation Hours | August 17 (Thu) - August 18 (Fri) 07:00 - 18:00



- | | |
|----------------------------------|--------------------------------------|
| 17 Seolim Inc. | 33 DAEWOONG |
| 18 OSTEONIC | 34 ALLOGEN |
| 19 L&K Biomed Co. Ltd. | 35 Chong Kun Dang |
| 20 DAIICHI SANKYO KOREA CO., LTD | 36 SK Chemicals |
| 21 HANSBIOMED | 37 Medyssey |
| 22 Corentec | 38 LG Chem |
| 23 CELLUMED | 39 Leica Microsystems Ltd. Korea |
| 24 HONECARE | 40 KnP |
| 25 Samjinpharm | 41 ALVOGEN KOREA |
| 26 WSI | 42 JW Pharmaceutical |
| 27 SIMENS Healthineers Ltd. | 43 Stryker Korea |
| 28 Hanmi Science | 44 Myungmoon Pharm. Co., Ltd. |
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| 30 B-care | 46 GENOSS Co., Ltd. |
| 31 ILYANG PHARM | 47 GE Healthcare Korea |
| 32 ENDOVISION. Co. Ltd | 48 SOLCO BIOMEDICAL CO., LTD |



SCIENTIFIC PROGRAM

AUGUST 17 (Thursday)

07:45-08:00 **Opening Ceremony**

3F,
Room A

08:00-08:30 **[FP01] Free Paper 1
Adult Spinal Deformity 1**

3F,
Room A

Chairs Shah Alam (Bangladesh Spine and Orthopedic Hospital, Bangladesh)
Kyu Jung Cho (Inha University College of Medicine, Korea)
Seong Yi (Yonsei University College of Medicine, Korea)

08:00-08:05 **[FP01-1]**
Surgery Using an Iliac Screw in Patients with Non-Ambulatory Neuromuscular Scoliosis Worsens Hip Subluxation by Reducing the Pelvic Tilting Angle. (Relationship between Pelvic Parameters and Hip Subluxation in Surgery Using a Mono-Iliac Screw)
Sang-Ho Kim (College of Medicine, Yonsei University, Korea)

08:05-08:10 **[FP01-2]**
Influence of Negative Sagittal Imbalance and Upper Cervical Malalignment on Clinical Outcomes in Patients with Craniovertebral Junction Kyphosis
Jae Taek Hong (Eunpyung St. Mary's Hospital, The Catholic University of Korea, Korea)

08:10-08:15 **[FP01-3]**
Is There an Association between Psychiatric Disorders and Adolescent Idiopathic Scoliosis? A Large-Database Study
Soo-Bin Lee (Catholic Kwandong University International St.Mary's Hospital, Korea)

08:15-08:20 **[FP01-4]**
Can Intraoperative C2 Slope Predict Postoperative Standing Sagittal Alignment Following Cervical Deformity Correction?
Namhoo Kim (Yonsei University College of Medicine, Korea)

08:20-08:30 **Discussion**



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Abstracts

AUGUST 17 (Thursday)

08:00-08:30 [FP02] Free Paper 2 **3F,**
Endoscopic Technologies & Techniques 1 **Room B**

Chairs Yung-Hsiao Chiang (Taipei Medical University Hospital, Taiwan)
Chang-Nam Kang (Hanyang University College of Medicine, Korea)
Sung Bum Kim (Kyung Hee University School of Medicine, Korea)

08:00-08:05 [FP02-1]
**Biportal Endoscopic Paraspinal Decompressive Foraminotomy for Lumbar
Foraminal Stenosis: Clinical Outcomes and Factors Influencing Unsatisfactory
Outcomes**

Ki-Han You (Hallym University College of Medicine, Kangnam Sacred Heart Hospital,
Korea)

08:05-08:10 [FP02-2]
**Minimally Invasive Transforaminal Lumbar Interbody Fusion Using the
Biportal Endoscopic Techniques Versus Microscopic Tubular Technique**

Hyun-Jin Park (Hallym university Kangnam Sacred Heart Hospital, Korea)

08:10-08:15 [FP02-3]
**Learning Curve and Clinical Outcome of Biportal Endoscopic-Assisted
Lumbar Interbody Fusion**

Ju Eun Kim (Baroseomyeon Hospital, Korea)

08:15-08:20 [FP02-4]
**Anterior Cervical Discectomy and Fusion Versus Cervical Biportal Endoscopic
Spine Surgery: A Retrospective Comparison with a Five-Year Experiences**

Seok Bong Jung (Jinju Bon Hospital, Korea)

08:20-08:30 **Discussion**

AUGUST 17 (Thursday)

**08:00-08:30 [FP03] Free Paper 3
MIS 1**

**5F,
Room C**

Chairs Huilin Yang (The First Affiliated Hospital of Soochow University, China)
Chung Hwan Kim (University of Ulsan College of Medicine, Korea)
Chi Heon Kim (Seoul National University College of Medicine, Korea)

08:00-08:05 **[FP03-1]**
Learning Curve for Biportal Endoscopic Posterior Cervical Foraminotomy Determined Using the Cumulative Summation Test
Jin-Tak Hyun (Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Korea)

08:05-08:10 **[FP03-2]**
Ten-Year Outcomes of Minimally Invasive Versus Open Transforaminal Lumbar Interbody Fusion in Patients with Single-Level Lumbar Spondylolisthesis
Young-Hyun Yoon (Yonsei University College of Medicine, Korea)

08:10-08:15 **[FP03-3]**
Fusion Success in Patients with Degenerative Lumbar Disease without Spondylolisthesis: A Global Study Comparing Anterolateral Versus Posterior MIS Approaches at 2-Years Follow-Up
Jiwon Park (Korea University Ansan Hospital, Korea)

08:15-08:20 **[FP03-4]**
Mini Open Retropleural Approach Based on Microneurosurgical Anatomy Focusing on Membranes and Layers
Takashi Moriwaki (Osaka Gyoumeikan Hospital, Japan)

08:20-08:30 **Discussion**



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Abstracts

AUGUST 17 (Thursday)

08:30-09:00 [FP04] Free Paper 4
Adult Spinal Deformity 2

3F,
Room A

Chairs Fan Tao (Capital Medical University, China)
 Chang Ju Hwang (University of Ulsan College of Medicine, Korea)
 Joo Han Kim (Korea University College of Medicine, Korea)

08:30-08:35 **[FP04-1]**
Decision of Pedicle Subtraction Osteotomy Vertebra in Surgical Correction for Ankylosing Spondylitis with Thoracolumbar Kyphosis

Xiongjie Li (Kyung Hee University Hospital at Gangdong, Kyung Hee University, China)

08:35-08:40 **[FP04-2]**
Use of Iliac Screw Associated with More Correction of Lumbar Lordosis than S2-Alar-Iliac Screw for Adult Spinal Deformity

JunBum Park (Kyung Hee University Hospital at Gangdong, Kyung Hee University, Korea)

08:40-08:45 **[FP04-3]**
Distal Junctional Failure after Long Fusion Surgery Stopping at L5 in Patients with Adult Spinal Deformity

Ho Yong Choi (Kyung Hee University Hospital at Gangdong, Korea)

08:45-08:50 **[FP04-4]**
Custom Interbody Cage Design and Manufacturing for Correction of Lumbar Spine Deformity

David Edis (Monash University, Australia)

08:50-09:00 **Discussion**

AUGUST 17 (Thursday)

08:30-09:00

[FP05] Free Paper 5**Endoscopic Technologies & Techniques 2****3F,
Room B**

Chairs Luthfi Gatam (Eka Hospital BSD, Indonesia)
Hyun-Jin Park (Hallym University College of Medicine, Korea)
Junseok Bae (Wooridul Spine Hospital, Korea)

08:30-08:35

[FP05-1]

Clinical Analysis of Biportal Endoscope and Tubular Microscope for Single-Level Lumbar Discectomy in Obese Patients: A Multicenter, Retrospective Analysis

Sang-Min Park (Seoul National University Bundang Hospital, Korea)

08:35-08:40

[FP05-2]

Single-Level Endoscopic TLIF Achieves Similar 1-Year Clinical and Radiological Outcomes Compared to Conventional MIS-TLIF with Reduced Surgery Duration, Blood Loss and Length of Hospital Stay

David Shaoen Sim (Singapore General Hospital, Singapore)

08:40-08:45

[FP05-3]

Comparison of Primary Versus Revision Lumbar Discectomy Using a Biportal Endoscopic Technique

Jae Yeun Hwang (Kangnam Sacred Heart Hospital, Hallym University School of Medicine, Korea)

08:45-08:50

[FP05-4]

Effectiveness of the Two-Way BESS Decompression in Central to Extraforaminal Stenosis Patients with Facet Joint Preservation: Minimum 1 Year Short-Term Follow Up

Young-Hyun Yoon (Yonsei University College of Medicine, Korea)

08:50-09:00

Discussion



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Abstracts

AUGUST 17 (Thursday)

**08:30-09:00 [FP06] Free Paper 6
MIS 2**

**5F,
Room C**

Chairs Huilin Yang (The First Affiliated Hospital of Soochow University, China)
Ji-Won Kwon (Yonsei University College of Medicine, Korea)
Kyoung Tae Kim (Kyungpook National University School of Medicine, Korea)

08:30-08:35 **[FP06-1]**
**Slip Reduction in Oblique Lateral Interbody Fusion for Degenerative
Spondylolisthesis**
Hee-Woong Chung (Ajou University Hospital, Korea)

08:35-08:40 **[FP06-2]**
**Decompression without Fusion in Degenerative Lumbar Spondylolisthesis :
Biportal Endoscopic Spinal Surgery**
Ho-Jin Lee (Chungnam National University College of Medicine, Korea)

08:40-08:45 **[FP06-3]**
**A Morphological Assessment Method for Percutaneous Augmentation in
Elderly Osteoporotic Bursting Fracture**
Yu-Ching Hsiao (National Cheng Kung University, Taiwan)

08:45-08:50 **[FP06-4]**
**Cost-Utility Analysis of Endoscopic Lumbar Discectomy Following a Uniform
Clinical Pathway in the Korean National Health Insurance System**
Chi Heon Kim (Seoul National Univeristy Hospital, Korea)

08:50-09:00 **Discussion**

AUGUST 17 (Thursday)

09:00-10:15 [SY01] Symposium 1 Adult Sagittal Imbalance

3F,
Room A

Chairs Yoshihisa Kotani (Kansai Medical University Medical Center, Japan)
Chong-Suh Lee (Bumin Hospital, Korea)
Jung-Kil Lee (Chonnam National University Medical School, Korea)

09:00-09:12 [SY01-1]

Deformity Surgery in the Elderly

Paul Park (University of Tennessee Health Science Center, USA)

09:12-09:24 [SY01-2]

Selecting Osteotomy Location in Revision Surgery for Adult Sagittal Imbalance

Han Jo Kim (Hospital for Special Surgery, USA)

09:24-09:36 [SY01-3]

Patient-Specific Implants to Accurately Attain Desired Spinal Alignment

Jae-Hyuk Yang (Korea University College of Medicine, Korea)

09:36-09:48 [SY01-4]

Cervical Spondylotic Kyphosis with Stenosis: C7/T1 Sparing Anterior Only Multi-Level Correction

Keun Su Kim (Yonsei University College of Medicine, Korea)

09:48-10:00 [SY01-5]

How to Prevent PJK with MIS Techniques for ASD

Neel Anand (Cedars-Sinai Medical Center, USA)

10:00-10:15 Discussion



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Abstracts

AUGUST 17 (Thursday)

09:00-10:15 **[SY02] Symposium 2** **3F,**
Room B
What You Should Know: How to Maximize the Effects of MIS Fusion

Chairs Vit Kotheeranurak (Chulalongkorn University & King Chulalongkorn Memorial Hospital, Thailand)
 Jae Chul Lee (Soonchunhyang University College of Medicine, Korea)
 Seung Won Park (Chung-ang University College of Medicine, Korea)

09:00-09:12 **[SY02-1]**
Single Position Posterior Instrumentation after Minimally Invasive Lateral Fusion
 Worawat Limthongkul (Chulalongkorn University, Thailand)

09:12-09:24 **[SY02-2]**
Minimizing Radiation Exposure for MIS Spinal Fusion: Enhancing Safety and Surgical Precision with Technology
 Stephen Ryu (Stanford University Medical Center, USA)

09:24-09:36 **[SY02-3]**
Improving Lordosis in MIS Fusions - What Strategies Are Available?
 Jacob Oh (Tan Tock Seng Hospital, Singapore)

09:36-09:48 **[SY02-4]**
Expandable Lumbar Interbody Fusion Cages in the Treatment of Spinal Deformity
 Charles L. Branch (Wake Forest University School of Medicine, USA)

09:48-10:00 **[SY02-5]**
Use of Various Bone Substitutes for MIS Fusion ; Pros and Cons of Each Substitutes
 Sang-Bum Kim (Chungnam National University College of Medicine, Korea)

10:00-10:15 **Discussion**

10:15-10:35 **Refreshment Break with Exhibits**

AUGUST 17 (Thursday)

10:35-11:15 Presidential Address & Keynote Address

3F,
Room A+B

- 10:35-10:50 **Presidential Address**
Seok Woo Kim (President of ISASS AP 2023)
- 10:50-10:55 **Presidential Address**
Keung Nyun Kim (President of ISASS AP 2023)
- 10:55-11:05 **Keynote Address**
Michael Y. Wang (President of ISASS)
- 11:05-11:15 **Introduction of IJSS**
Charles L. Branch (Editor-in-Chief of IJSS)

11:15-12:35 [PL01] Plenary Lecture 1 MIS Surgery for ASD (Adult Spinal Deformity)

3F,
Room A+B

- Chairs Jacob Oh (Tan Tock Seng Hospital, Singapore)
Michael Y. Wang (University of Miami Hospital, USA)
Jung-Hee Lee (Kyung Hee University School of Medicine, Korea)
Keung Nyun Kim (Yonsei University College of Medicine, Korea)
- 11:15-11:20 **[PL01-1]**
Introduction: What's Happening Now?
Jacob Oh (Tan Tock Seng Hospital, Singapore)
- 11:20-11:32 **[PL01-2]**
Tailored Modification of Lateral Access Surgery for Minor and Major Spinal Deformities
Jae Chul Lee (Soonchunhyang University College of Medicine, Korea)
- 11:32-11:44 **[PL01-3]**
Multilevel MIS Lateral Fusion for Adult Spinal Deformity
Neel Anand (Cedars-Sinai Medical Center, USA)



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AUGUST 17 (Thursday)

- 11:44-11:56 **[PL01-4]**
Anterior Column Realignment for Adult Spinal Deformity
Juan Uribe (Barrow Neurological Institute, USA)
- 11:56-12:08 **[PL01-5]**
Comparative Analysis of Clinical and Radiologic Outcome after MIS Correction vs Classic Technique
Jae-Young Hong (Korea University College of Medicine, Korea)
- 12:08-12:20 **[PL01-6]**
Utilization of Neuromonitoring and Its Clinical Significance in MIS Deformity Surgery
Jae Taek Hong (The Catholic University of Korea College of Medicine, Korea)
- 12:20-12:35 **Discussion**
- 12:35-12:50 **Group Photo**

12:50-13:50 [LS01] Luncheon Symposium 1
Viatrix Korea



**3F,
Room A**

Chair Sun Ho Lee (Sungkyunkwan University School of Medicine, Korea)

- 12:50-13:50 **[LS01]**
Neuropathic Pain in Low Back Pain: Prevalence, Risk Factor and Real Practice
Ji-Won Kwon (Yonsei University College of Medicine, Korea)

AUGUST 17 (Thursday)

12:50-13:50

[LS02] Luncheon Symposium 2 CGbio


CGBIO CELL & GROWTH FACTOR BIOTECHNOLOGY

**3F,
Room B**

Chair Chang-Nam Kang (Hanyang University College of Medicine, Korea)

12:50-13:20

[LS02-1] Efficacy and Safety of Novosis Putty

Jae Hwan Cho (University of Ulsan College of Medicine, Korea)

Chair Keung Nyun Kim (Yonsei University College of Medicine, Korea)

13:20-13:50

[LS02-2] Advanced Expandable Cage in MIS-TLIF: EXCENDER

Jeong-Yoon Park (Yonsei University College of Medicine, Korea)

12:50-13:50

[LS03] Luncheon Symposium 3 SpinoTech Co., Ltd.



SpinoTech Co., Ltd.

**5F,
Room C**

Chair Jae Taek Hong (The Catholic University of Korea College of Medicine, Korea)

12:50-13:20

[LS03-1] Kinematics/ Mechanical Properties Review Surrounding the Cervical Arthroplasty; Prompting the Proper Implementation of the Devices

Junho Lee (Kyung Hee University School of Medicine, Korea)

13:20-13:50

[LS03-2] ROTAIO Cervical Arthroplasty; Kinematic Rationale and Clinical Experience

Claudius Thomé (Medical University Innsbruck, Germany)



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Abstracts

AUGUST 17 (Thursday)

13:50-15:05 [SY03] Symposium 3
Current Issues of Deformity Surgery

3F,
Room A

Chairs Han Jo Kim (Hospital for Special Surgery, USA)
Hak-Sun Kim (Yonsei University College of Medicine, Korea)
Seung-Hwan Yoon (Inha University College of Medicine, Korea)

13:50-14:02 **[SY03-1]**
Adult Deformity with OLIF51
Yoshihisa Kotani (Kansai Medical University Medical Center, Japan)

14:02-14:14 **[SY03-2]**
Minimally Invasive Techniques to Reduce Morbidity and Improve Alignment
Sam Yeol Chang (Seoul National University College of Medicine, Korea)

14:14-14:26 **[SY03-3]**
ACR for Treating Deformities
Michael Y. Wang (University of Miami Hospital, USA)

14:26-14:38 **[SY03-4]**
MIS (Thoracoscopy) in Pediatric Scoliosis with Tethering
Massimo Balsano (University and Hospital Trust, Italy)

14:38-14:50 **[SY03-5]**
Optimizing Value in Adult Spinal Deformity Surgery
Han Jo Kim (Hospital for Special Surgery, USA)

14:50-15:05 **Discussion**

AUGUST 17 (Thursday)

13:50-15:05

[SY04] Symposium 4

MIS Fusion: What's New? What's Coming?

3F,
Room B

Chairs Neel Anand (Cedars-Sinai Medical Center, USA)
Se-Jun Park (Sungkyunkwan University School of Medicine, Korea)
Se-Hoon Kim (Korea University College of Medicine, Korea)

13:50-14:02

[SY04-1]

Adjacent Segmental Pathology after Minimally Invasive TLIF - 1, 2, 5 and 10 Years Follow-Up

Yung Park (National Health Insurance Service Ilsan Hospital, Korea)

14:02-14:14

[SY04-2]

Minimally Invasive Lateral Fusion or OLIF...Which Is Best?

Richard Hynes (The B.A.C.K. Center, USA)

14:14-14:26

[SY04-3]

Advancement of Intervertebral Cage Technology ; How Did It Impact MIS Fusion?

Tae-Keun Ahn (CHA University School of Medicine, Korea)

14:26-14:38

[SY04-4]

L5/S1 OLIF ; Technical Consideration and Application

Seung Won Park (Chung-ang University College of Medicine, Korea)

14:38-14:50

[SY04-5]

Complication Avoidance and Management in MI-TLIF

Weerasak Singhatanadgige (King Chulalongkorn Memorial Hospital, Thailand)

14:50-15:05

Discussion

15:05-15:25

Refreshment Break with Exhibits



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AUGUST 17 (Thursday)

15:25-16:25 [BP01] Best Paper 1

3F,
Room A

Chairs Wataru Narita (Kameoka City Hospital, Japan)
 Hansen A. Yuan (SUNY Upstate Medical University, USA)
 Jin Sup Yeom (Seoul National University College of Medicine, Korea)
 Jae Chil Jang (Soonchunhyang University College of Medicine, Korea)

15:25-15:35 [BP01-1]
Can We Control Lateral Shoulder Balance through Proximal Thoracic Curve Correction in Lenke Type 2 Adolescent Idiopathic Scoliosis?
 Hyung Rae Lee (UiJeongbu Eulji Medical Center, Korea)

15:35-15:45 [BP01-2]
Rotational Changes Following Use of Direct Vertebral Rotation in Adolescent Idiopathic Scoliosis
 Dong-Gune Chang (Inje University Sanggye Paik Hospital, Korea)

15:45-15:55 [BP01-3]
Time-Dependent Changes in Stiffness-Related Functional Disability (SRFD) after Long Segmental Fusion in Elderly Patients with Adult Spinal Deformity - Minimum 2-Year Follow-Up Results -
 Se-Jun Park (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea)

15:55-16:05 [BP01-4]
Selective Thoracolumbar Fusion in Adult Spinal Deformity (ASD) Double Curves with Circumferential Minimally Invasive Surgery (CMIS): 2-Year Minimum Follow Up
 Neel Anand (Cedars-Sinai Medical Center, USA)

16:05-16:15 [BP01-5]
Stable Long-Term Regional and Global Alignment in Patients Treated with Minimally Invasive Lateral Retropleural Thoracic Discectomy without Fixation
 Steve Cho (Barrow Neurological Institute, USA)

16:15-16:25 [BP01-6]
Advancements in Cervical Myelopathy Treatment: Exploring Minimally Invasive Laminoplasty through Comparative Analysis
 Wataru Narita (Kameoka Municipal Hospital, Japan)

AUGUST 17 (Thursday)

15:25-16:25 [BPO2] Best Paper 2

3F,
Room B

Chairs Muhammad Tariq Sohail (Doctors Hosp. & Medical Ctr., Pakistan)
Charles L. Branch (Wake Forest University School of Medicine, USA)
Young-Yul Kim (The Catholic University of Korea College of Medicine, Korea)
Chun Kee Chung (Seoul National University College of Medicine, Korea)

15:25-15:35 [BPO2-1]

Proximal Junction Uninstrumented Bone Fusion as a Feasible Additive Procedure to Delay or Prevent Proximal Junctional Kyphosis/Failure

Sungjae An (Korea University Anam Hospital, Korea)

15:35-15:45 [BPO2-2]

Comparison of Fusion, Subsidence, and Clinical Results between 3D-Printed Porous Titanium Cage and Polyetheretherketone (PEEK) Cage in Posterior Lumbar Interbody Fusion: A Minimum of 2-Years Follow-Up

Sehan Park (Asan Medical Center, University of Ulsan College of Medicine, Korea)

15:45-15:55 [BPO2-3]

Revision Surgery of Upper Cervical Fusion to Correct Atlantoaxial Instability: A Retrospective Study of 19 Cases

Donghun Kim (Eunpyeong St. Mary's Hospital, Korea)

15:55-16:05 [BPO2-4]

Design and 3D Printing of Novel Titanium Spine Rods with Lower Flexural Modulus & Stiffness Profile with Optimised Imaging Compatibility

Naresh Kumar (National University Health System, Singapore)

16:05-16:15 [BPO2-5]

The Corrective Criteria to Avoid Adjacent Segment Degeneration Following Surgical Correction for Lumbar Spondylolisthesis

Sung-Min Kim (Kyung Hee University Hospital at Gangdong, Kyung Hee University, Korea)

16:15-16:25 [BPO2-6]

Efficacy of a Newly Designed Helical-Shaped 3D-Printed Titanium Cage for Cervical Vertebral Defect Healing in Rabbits

Mosharraf Hossain (Soonchunhyang University, College of Medicine, Bucheon Hospital, Bangladesh)



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AUGUST 17 (Thursday)

**15:25-15:55 [FP07] Free Paper 7
Miscellaneous 1**

**5F,
Room C**

Chairs Hee Kit Wong (National University of Singapore, Singapore)
 Jin Hwan Kim (Inje University College of Medicine, Korea)
 Seung-Myung Moon (Hallym University College of Medicine, Korea)

15:25-15:30 **[FP07-1]**
**Machine Learning-Based Measurement of the Regional and Global Spinal
 Parameters Using the Concept of Incidence Angle of Inflection Points**
 Sung Hoon Choi (Hanyang University Hospital, Korea)

15:30-15:35 **[FP07-2]**
**Injectable Nanomaterial-Based Peptide Hydrogel: A Novel Therapeutic
 Approach for Intervertebral Disc Regeneration**
 Inbo Han (CHA Univ. School of Medicine, Korea)

15:35-15:40 **[FP07-3]**
**Applying Bioglue® after Durotomy in Intradural Spinal Cord Tumor Causing
 Neurologic Deterioration**
 Sun Woo Jang (Asan Medical Center, Korea)

15:40-15:45 **[FP07-4]**
**Monolithic 3D-Printed Silicon Nitride-PEEK Composite Cervical Cages
 Demonstrate Antimicrobial Effects in Vitro**
 Ryan Bock (SINTX Technologies, USA)

15:45-15:55 **Discussion**

AUGUST 17 (Thursday)

**15:55-16:25 [FP08] Free Paper 8
Miscellaneous 2**

**5F,
Room C**

Chairs John Yunseo Choi (Spine Ortho Clinic, Australia)
Kee-Won Rhyu (The Catholic University of Korea College of Medicine, Korea)
Koang Hum Bak (Hanyang University College of Medicine, Korea)

15:55-16:00 **[FP08-1]**
Does Posterior Lumbar Interbody Fusion Using 16 Degree Rectangular Shape 3-D Cage with Modified Smith-Peterson Osteotomy Provides Proper Segmental Lordosis?

Sung Bum Kim (Kyung-Hee University Medical Center, Korea)

16:00-16:05 **[FP08-2]**
Comparative Analysis of the Occurrence Factors for Adjacent Segment Disease -With Patients Followed More than 10 Years after Lumbar Spinal Fusion-

Taejong Jeong (Sahmyook Seoul Medical Center, Korea)

16:05-16:10 **[FP08-3]**
Short-Term Outcomes of B-Dyn Dynamic Fixation System in Treatment of Lumbar Degenerative Diseases

Ngoc Quyen Nguyen (108 Military Central Hospital, Vietnam)

16:10-16:15 **[FP08-4]**
Sacroiliac Joint Injection for Management Sacroiliac Joint Pain after Lumbosacral Spinal Fusion Surgery: A Retrospective Study at One Center in Vietnam

Vo Thanh Nghia (Neurosurgery, Vietnam)

16:15-16:25 **Discussion**



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AUGUST 17 (Thursday)

16:25-16:55 [FP09] Free Paper 9 **3F,**
Room A
Trauma, Tumor & Infection 1

Chairs Ruey-Mo Lin (Tainan Municipal An-Nan Hospital, China Medical University, Taiwan)
 Chang Hwa Hong (Soonchunhyang University College of Medicine, Korea)
 Jeong-Yoon Park (Yonsei University College of Medicine, Korea)

16:25-16:30 **[FP09-1]**
**Prognostic Factors in Spinal Intradural Hemangioblastoma: An Analysis of
 Surgical Outcomes and Tumor Characteristics**
 Hyun Jun Jang (Gangnam Severance Hospital, Korea)

16:30-16:35 **[FP09-2]**
**Trends in Survival and Surgical Methods in Patients Surgically Treated for
 Metastatic Spinal Tumors: 25-Year Experience in a Single Institution**
 Han-Seok Yang (Samsung Medical Center, Sungkyunkwan University School of Medicine,
 Korea)

16:35-16:40 **[FP09-3]**
**Bone Bridge Effect for the Treatment of Acute Osteoporosis Vertebral
 Compression Fractures: Multistrategic Approach Using Anabolic Versus
 Anti-Resorptive Agents**
 Ja-Yeong Yoon (Sun General Hospital, Korea)

16:40-16:45 **[FP09-4]**
Clinical Outcomes of Surgical Debridement Only in Pyogenic Spondylitis
 Ohsang Kwon (Seoul National University Bundang Hospital, Korea)

16:45-16:55 **Discussion**

AUGUST 17 (Thursday)

**16:25-16:55 [FP10] Free Paper 10
Biomechanics**

**3F,
Room B**

Chairs Yung-Hsiao Chiang (Taipei Medical University Hospital, Taiwan)
Sam Yeol Chang (Seoul National University College of Medicine, Korea)
Hyeun Sung Kim (Nanoori Hospital, Korea)

16:25-16:30 **[FP10-1]**
Determining the Instantaneous Center of Rotation of the Cervical Spine via Computer-Assisted Radiographic Analysis

Jae Hyuk Shin (St. Vincent's Hospital, The Catholic University of Korea, Korea)

16:30-16:35 **[FP10-2]**
Biomechanical Comparison of Posterior Fixation Combinations with an Allograft Spacer between the Lateral Mass and Pedicle Screws

Soo-Bin Lee (Catholic Kwandong University International St.Mary's Hospital, Korea)

16:35-16:40 **[FP10-3]**
Exploring the Correlation between MRI Degenerative Stages of Intervertebral Discs, Chemical Composition, and Biomechanical Properties of the Nucleus Pulposus

Kuo-Yuan Huang (National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Taiwan)

16:40-16:45 **[FP10-4]**
The Effect of a New Tethering Device on the Biomechanics of Short-Segment Fusion of the Lumbar Spine: A Finite Element Analysis

Natthaphat Viriya (Chulalongkorn University, Thailand)

16:45-16:55 **Discussion**



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Abstracts

AUGUST 17 (Thursday)

**16:25-16:55 [FP11] Free Paper 11
Miscellaneous 3**

**5F,
Room C**

Chairs Worawat Limthongkul (Chulalongkorn University, Thailand)
 Jaewan Soh (Sahmyook Medical Center, Korea)
 Dosang Cho (Ewha Womans University College of Medicine, Korea)

16:25-16:30 **[FP11-1]**
**Lumbar Arthroplasty for Treatment of Primary or Recurrent Lumbar Disc
 Herniation**
 Juan Amaya (Spine Ortho Clinic, Colombia)

16:30-16:35 **[FP11-2]**
**The Result of Treating Myelopathy due to Cervical Disc Herniation with
 Anterior Cervical Discectomy and Fusion Surgery**
 Duy Nguyen Nhat (University of Medicine and Pharmacy, Vietnam)

16:35-16:40 **[FP11-3]**
**Unconstrained Cervical Total Disc Replacement Not One Design Suits Every
 Patient. Case Report**
 Juan Amaya (Spine Ortho Clinic, Colombia)

16:40-16:45 **[FP11-4]**
**How Would One Select Levels to be Instrumented in Metastatic Spine
 Tumour Surgery?**
 Naresh Kumar (National University Hospital, Singapore)

16:45-16:55 **Discussion**

AUGUST 17 (Thursday)

16:55-17:25 [FP12] Free Paper 12
Trauma, Tumor & Infection 2

**3F,
Room A**

Chairs Fan Tao (Capital Medical University, China)
 Dong Ki Ahn (Seoul Sacred Heart General Hospital, Korea)
 Sun Ho Lee (Sungkyunkwan University School of Medicine, Korea)

16:55-17:00 **[FP12-1]**
Effect of Preoperative Acupuncture and Epidural Steroid Injection on Postoperative Infection after Lumbar Spinal Surgery

Sahyun Sung (College of Medicine, Ewha Womans University Seoul Hospital, Korea)

17:00-17:05 **[FP12-2]**
Pharmacokinetic Interpretation of Applying Local Drug Delivery System for the Treatment of Deep Surgical Site Infection in the Spine

Ahmad Khalid Madadi (Inje University, Afghanistan)

17:05-17:10 **[FP12-3]**
Which Factors Are Associated with the Risk of Re-Operation after Percutaneous Vertebroplasty or Kyphoplasty for Thoracolumbar Vertebral Fracture? Analysis of the National Health Insurance Service Claims Data in Korea (2006-2017)

Sung-ryul Choi (Yonsei University College of Medicine, Korea)

17:10-17:15 **[FP12-4]**
Anatomical Consideration for Anterior Approach of Cervicothoracic Junction: A CT Image Analysis

Eugene Park (Kyungpook National University Hospital, Korea)

17:15-17:25 **Discussion**



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Abstracts

AUGUST 17 (Thursday)

16:55-17:25

[FP13] Free Paper 13

Value, Outcomes & Healthcare Economics

3F,

Room B

Chairs Hee Kit Wong (National University of Singapore, Singapore)
 Hun-Kyu Shin (Sungkyunkwan University School of Medicine, Korea)
 Yong-Jun Cho (Hallym University College of Medicine, Korea)

16:55-17:00

[FP13-1]

The Comprehensive Enhanced Recovery after Surgery (ERAS) Protocol in the Entire Spinal Surgery: A Comparative Analysis of Clinical Outcomes and Medical Costs between Primary Spinal Tumors and Degenerative Spinal Diseases

Woon Tak Yuh (Hallym University Dongtan Sacred Heart Hospital, Korea)

17:00-17:05

[FP13-2]

Risk of Reoperation and Infection Rate after Spine Osteotomy and Fusion Compare with Spinal Fusion Alone

Jaewon Shin (National Health Insurance Service, Korea)

17:05-17:10

[FP13-3]

The Modified Frailty Index Can Predict the Postoperative Complications after Lumbar Spine Surgery

Jiwon Park (Korea University Ansan Hospital, Korea)

17:10-17:15

[FP13-4]

Does Epidural Steroid Injection Affect Osteoporosis in Patients with Denosumab Therapy?

JunHan Kim (CHA Bundang Medical Center, CHA University, Korea)

17:15-17:25

Discussion

AUGUST 17 (Thursday)

16:55-17:25 [FP14] Free Paper 14
Miscellaneous 4

**5F,
Room C**

Chairs Michael Y. Wang (University of Miami Hospital, USA)
 Jae Hwan Cho (University of Ulsan College of Medicine, Korea)
 Yoon Ha (Yonsei University College of Medicine, Korea)

16:55-17:00 **[FP14-1]**
Risk Factors for Radiographic Progression of Proximal Junctional Fracture in Patients Undergoing Surgical Treatment for Adult Spinal Deformity
 Choong-Won Jung (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea)

17:00-17:05 **[FP14-2]**
Case-Based Review of Surgical Treatment for Pediatric Sacrococcygeal Teratomas
 Mohammad Mohsen Mosleh (Inje University Ilsan Paik Hospital, Graduate School of Medicine, Afghanistan)

17:05-17:10 **[FP14-3]**
Tandem Spinal Stenosis: A Proposed Algorithm Based on Systematic Review
 Todsapon Chanchaenchai (Chulalongkorn University, Thailand)

17:10-17:15 **[FP14-4]**
Feasibility Assessment of an Expandable Lumbar Interbody Cage in Patients with High-Risk Factors for Subsidence: Preliminary Report
 Byung-Il Yoon (Chung-Ang University Hospital, College of Medicine, Chung-Ang University, Korea)

17:15-17:25 **Discussion**

17:30 Welcome Reception

**6F,
STUDIO
1+2+3**



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Abstracts

AUGUST 18 (Friday)

08:00-08:30 [FP15] Free Paper 15
Trauma, Tumor & Infection 3

3F,
Room A

Chairs Paul Park (University of Tennessee Health Science Center, USA)
 Jeong-Hyun Yoo (Seongnam Citizens Medical Center, Korea)
 Chang-Il Ju (Chosun University College of Medicine, Korea)

08:00-08:05 **[FP15-1]**
Optimal Surgical Methods for Solitary Metastasis of the Thoracolumbar Spine
 Chang-Min Ha (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea)

08:05-08:10 **[FP15-2]**
Some Aspects of Dorsal Stabilization in Odontoid Fractures
 Konstantin Semkin (Simferopol Emergency Hospital, Russia)

08:10-08:15 **[FP15-3]**
Application of Open Door Laminoplasty Following Intradural Tumor Resection in Cervical, Thoracic, and Lumbar Spine
 Andhika Yudistira (Universitas Brawijaya, Indonesia)

08:15-08:20 **[FP15-4]**
Incidence and Treatment Trends of Infectious Spondylodiscitis in South Korea: A Nationwide Population-Based Study
 Hee Jung Son (Nowon Eulji Medical Center, Eulji University School of Medicine, Korea)

08:20-08:30 **Discussion**

AUGUST 18 (Friday)

08:00-08:30

[FP16] Free Paper 16**Endoscopic Technologies & Techniques 3****3F,
Room B**

Chairs Stephen Ryu (Stanford University Medical Center, USA)
Dae-Jung Choi (Himnaera Hospital, Korea)
Seung-Won Choi (Chungnam National University College of Medicine, Korea)

08:00-08:05

[FP16-1]**How to Manage Intraoperative and Postoperative Bleeding in Unilateral Biportal Endoscopic Spine Surgery**

Yong Jin Park (Suncheon Hana Hospital, Korea)

08:05-08:10

[FP16-2]**Learning Curve and Clinical Outcome of Biportal Endoscopic Transforaminal Lumbar Interbody Fusion**

Sang Bum Kim (Sejong Cheung Nam University Hospital, Korea)

08:10-08:15

[FP16-3]**What Is the Real Cause of a Postoperative Spinal Epidural Hematoma in Hypertensive Patients?**

Young Rok Go (Seoul Sacred Heart General Hospital, Korea)

08:15-08:20

[FP16-4]**Comparison of Minimal Invasive Versus Biportal Endoscopic Transforaminal Lumbar Interbody Fusion for Single-Level Lumbar Disease**

Ju Eun Kim (Baroseomyeon Hospital, Korea)

08:20-08:30

Discussion



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Abstracts

AUGUST 18 (Friday)

**08:00-08:30 [FP17] Free Paper 17
MIS 3**

**5F,
Room C**

Chairs Juan Uribe (Barrow Neurological Institute, USA)
 Eun Seok Son (Keimyung University School of Medicine, Korea)
 Je Hoon Jeong (Soonchunhyang University College of Medicine, Korea)

- 08:00-08:05 **[FP17-1]**
The Influence on Adjacent Lumbar Segment after Oblique Lumbar Interbody Fusion for Spondylolisthesis
 Tae Shin Kim (Champodonamu Hospital, Korea)

- 08:05-08:10 **[FP17-2]**
Does Direct Decompression Necessary for Lateral Lumbar Interbody Fusion (LLIF)?: A Randomized Control Trial
 Worawat Limthongkul (Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thailand)

- 08:10-08:15 **[FP17-3]**
Risk Factors for Predicting "Clinical" Indirect Decompression Failure
 Kaweekrai Anusart (Chulalongkorn University, Thailand)

- 08:15-08:20 **[FP17-4]**
Effect of Difference Hip Positions on Lumbar Lordosis in Single Lateral Position for Lateral Lumbar Interbody Fusion
 Natavut Prasertkul (Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thailand)

- 08:20-08:30 **Discussion**

AUGUST 18 (Friday)

08:30-09:00

[FP18] Free Paper 18**Emerging Technologies & Techniques 1****3F,
Room A**

Chairs Scott Blumenthal (Texas Back Institute, USA)
Deuk Soo Jun (Gachon University College of Medicine, Korea)
Sung Bae Park (Seoul National University College of Medicine, Korea)

08:30-08:35

[FP18-1]

Multi-Pose-Based Convolutional Neural Network Model for Diagnosis of Patients with Central Lumbar Spinal Stenosis

Chang-Hyun Lee (Seoul National University Hospital, Korea)

08:35-08:40

[FP18-2]

Frontal Channel EEG-Based Biomarkers for Pain Severity Detection: Spectral Analysis, Phase-Amplitude Coupling, and Machine Learning Integration

Seungjun Ryu (Daejeon Eulji University Hospital, Korea)

08:40-08:45

[FP18-3]

Deep Learning Approach for Automatic Point Detection and Sagittal Alignment Analysis in Whole-Spine Lateral Radiographs

Sung Hyun Noh (Ajou University Hospital, Korea)

08:45-08:50

[FP18-4]

Comparative Study of Sagittal and Coronal Plane Balance of the Spine Measured Using a 3D Anthropometric Device and Spine X-Ray

Tae Hoon Kang (SMG-SNU BRM Medical Center, Korea)

08:50-09:00

Discussion



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Abstracts

AUGUST 18 (Friday)

08:30-09:00 [FP19] Free Paper 19 **3F,**
Room B
Endoscopic Technologies & Techniques 4

Chairs Richard Hynes (The B.A.C.K. Center, USA)
 Kwang-Sup Song (Chung-ang University College of Medicine, Korea)
 Dong Ah Shin (Yonsei University College of Medicine, Korea)

08:30-08:35 **[FP19-1]**
Expansion of Application of Unilateral Biportal Endoscopy in Degenerative Thoracic Disease

Hun-chul Kim (Daechan Hospital, Korea)

08:35-08:40 **[FP19-2]**
Posterior Cervical Foraminotomy Using Endoscopic Spine Surgery

Taehwan Chun (Samsung Grand Hospital, Korea)

08:40-08:45 **[FP19-3]**
Is Surgeon's Uniportal Experience Important for Unilateral Biportal Endoscopic Laminectomy? Comparative Analysis of Learning Curve Beginner and Uniportal Expert

Young San Ko (Keimyung University, Korea)

08:45-08:50 **[FP19-4]**
Percutaneous Endoscopic Lumbar Interbody Fusion B Transkambin or Posterolateral Approach? A Novel Technique-Expandable Tunnel for Protection of Exiting Root and Traversing Root

Yi-Hung Huang (Chia Yi Christian Hospital, Taiwan)

08:50-09:00 **Discussion**

AUGUST 18 (Friday)

**08:30-09:00 [FP20] Free Paper 20
MIS 4**

**5F,
Room C**

Chairs Anthony Yeung (DISC (Desert Institute for Spine Care), USA)
Ki-Tack Kim (Dong Tan City Hospital, Korea)
Jin-Sung Kim (The Catholic University of Korea College of Medicine, Korea)

08:30-08:35 **[FP20-1]**

A Comparative Analysis of Bi-Portal Endoscopic Spine Surgery and Unilateral Laminotomy for Bilateral Decompression in Multilevel Lumbar Stenosis Patients

Sub-Ri Park (Yonsei University College of Medicine, Korea)

08:35-08:40 **[FP20-2]**

An Expanded Surgical Corridor for Oblique Lumbar Interbody Fusion at L4/5: A Magnetic Resonance Imaging Study

Pakawas Praisarnti (Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thailand)

08:40-08:45 **[FP20-3]**

Minimally Invasive Transforaminal Lumbar Interbody Fusion for Spondylolisthesis: 2 Years Results at Vietduc Hospital

Tien Nguyen Le Bao (Viet Duc Hospital, Vietnam)

08:45-08:50 **[FP20-4]**

A Less Sacrifice of Stabilizing Structure Treatment by Bilateral-Contralateral Decompression for Spinal Stenosis in Degenerative Spondylolisthesis Using Unilateral Biportal Endoscopy

Dong Hyun Lee (The Leon Wiltse Memorial Hospital, Korea)

08:50-09:00 **Discussion**



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Abstracts

AUGUST 18 (Friday)

09:00-10:15 **[SY05] Symposium 5** **3F,**
Room A
Long Term Follow Up of ADR (Artificial Disc Replacement)

Chairs Jack Zigler (Texas Back Institute, USA)
 Dong-Ho Lee (University of Ulsan College of Medicine, Korea)
 Hyunchul Shin (Sungkyunkwan University School of Medicine, Korea)

09:00-09:12 **[SY05-1]**
Long Term Outcomes in Lumbar Arthroplasty
 Jack Zigler (Texas Back Institute, USA)

09:12-09:24 **[SY05-2]**
Long-term Result of Cervical Arthroplasty
 Ali Araghi (The Core Institute, USA)

09:24-09:36 **[SY05-3]**
CDA vs. Fusion for Multilevel Cervical Pathologies
 Byung-Wan Choi (Inje University College of Medicine, Korea)

09:36-09:48 **[SY05-4]**
Long-term Results and Controversies of Cervical TDR
 Keun Su Kim (Yonsei University College of Medicine, Korea)

09:48-10:00 **[SY05-5]**
Nucleus Replacement on an Early Stage Technology
 Ali Araghi (The Core Institute, USA)

10:00-10:15 **Discussion**

AUGUST 18 (Friday)

09:00-10:15

[SY06] Symposium 6

Endoscopic Decompression for Complex Spinal Pathologies: Current State of the Art

3F,
Room B

Chairs Keng-Chang Liu (Dalin Tzu Chi General Hospital, Taiwan)
Si Young Park (Yonsei University College of Medicine, Korea)
Choon Keun Park (Suwon Leon Wiltse Memorial Hospital, Korea)

09:00-09:12

[SY06-1]

Endoscopic Cervical Decompression, Is It the Real Deal?

Vit Kotheeranurak (Chulalongkorn University & King Chulalongkorn Memorial Hospital, Thailand)

09:12-09:24

[SY06-2]

Biportal Endoscopic ULBD for Thoracic Spinal Stenosis Secondary to Ossified Ligamentum Flavum

Cheol Wung Park (Daejeon Woori Hospital, Korea)

09:24-09:36

[SY06-3]

Endoscopic Spine Fusion: Short and Long-Term Outcomes

Ju-Eun Kim (Baroseomyeon Hospital, Korea)

09:36-09:48

[SY06-4]

Endoscopic Spine Fusion: Inevitable Complications and Deal

Dong Hwa Heo (Champodonamu Hospital, Korea)

09:48-10:00

[SY06-5]

Modified Techniques for Full-Endoscopic Decompression Surgery

Chang-Il Ju (Chosun University College of Medicine, Korea)

10:00-10:15

Discussion

10:15-10:35

Refreshment Break with Exhibits



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Abstracts

AUGUST 18 (Friday)

10:35-11:55 [PL02] Plenary Lecture 2 **3F,**
Navigation and Robotics: Present and Future **Room A+B**

Chairs Yen-Mou Lu (Kaohsiung Medical University Hospital, Taiwan)
 Stephen Ryu (Stanford University Medical Center, USA)
 Sang-Bum Kim (Chungnam National University College of Medicine, Korea)
 Eun Sang Kim (Sungkyunkwan University School of Medicine, Korea)

10:35-10:40 **[PL02-1]**
Introduction: What's Happening Now?
 Stephen Ryu (Stanford University Medical Center, USA)

10:40-10:52 **[PL02-2]**
Navigated LLIF
 Paul Park (University of Tennessee Health Science Center, USA)

10:52-11:04 **[PL02-3]**
Intraoperative CT Image-Based Navigation-Guided Surgery
 Juan Uribe (Barrow Neurological Institute, USA)

11:04-11:16 **[PL02-4]**
Robot-Guided Pedicle Screw Insertion
 Sheeraz Qureshi (Weill Cornell Medical College, Cornell University, USA)

11:16-11:28 **[PL02-5]**
Robotic Spine Surgery - "Learning Curve and Experience with 300 Cases"
 Luthfi Gatam (Eka Hospital BSD, Indonesia)

11:28-11:40 **[PL02-6]**
The Next Generation Robotic Spine Surgery in Korea and the Future
 Seong Yi (Yonsei University College of Medicine, Korea)

11:40-11:55 **Discussion**

11:55-12:10 **Group Photo**

AUGUST 18 (Friday)

12:10-13:10

[LS04] Luncheon Symposium 4 GS Medical

3F,
Room A

Chair Keun Su Kim (Yonsei University College of Medicine, Korea)

12:10-12:40

[LS04-1]

Development and Advancement of Cervical Artificial Disc

Seung-Hwan Yoon (Inha University College of Medicine, Korea)

12:40-13:10

[LS04-2]

AIF vs TDR in Cervical Spondylosis

Young San Ko (Keimyung University School of Medicine, Korea)

12:10-13:10

[LS05] Luncheon Symposium 5 Medtronic Korea

3F,
Room B

Chair Seung Won Park (Chung-Ang University College of Medicine, Korea)

12:10-13:10

[LS05]

Single Position, Prone Lateral Surgery. Hype or Evolution?

Jacob Oh (Tan Tock Seng Hospital, Singapore)

12:10-13:10

[LS06] Luncheon Symposium 6 Dong-A ST

5F,
Room C

Chair Seok Woo Kim (Hallym University College of Medicine, Korea)

12:10-13:10

[LS06]

The Evidence of Limaprost in the Treatment, Lumbar Spinal Stenosis

Jae Keun Oh (Hallym University College of Medicine, Korea)



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Abstracts

AUGUST 18 (Friday)

**13:10-14:40 [SY07] Symposium 7
Update of Disc Arthroplasty**

**3F,
Room A**

Chairs Ali Araghi (The Core Institute, USA)
 Seok Woo Kim (Hallym University College of Medicine, Korea)
 Keun Su Kim (Yonsei University College of Medicine, Korea)

13:10-13:15 **[SY07-1]**
Introduction: What's Happening Now?
 Ali Araghi (The Core Institute, USA)

13:15-13:32 **[SY07-2]**
Clinical Evidence on Cervical Disc Arthroplasty (Prospective Multicenter Trial of Cervical Arthroplasty and Long-Term Case Presentation)
 Claudius Thomé (Medical University Innsbruck, Germany)

13:32-13:49 **[SY07-3]**
Revision Cervical Arthroplasty
 Scott Blumenthal (Texas Back Institute, USA)

13:49-14:06 **[SY07-4]**
Lessons Learned from the Failure of the Partial Disc Replacement
 Chan Shik Shim (Wooridul Spine Centre, Healthpoint Hospital, UAE)

14:06-14:23 **[SY07-5]**
Osteolysis Related to TDR : Mechanical vs. Biological
 Young-Yul Kim (The Catholic University of Korea College of Medicine, Korea)

14:23-14:40 **Discussion**

AUGUST 18 (Friday)

13:10-14:40

[SY08] Symposium 8

Future Applications of Endoscopic Spine Surgery: What We Have and What Lies Ahead

3F,
Room B

Chairs Anthony Yeung (DISC (Desert Institute for Spine Care), USA)
Kwang-Sup Song (Chung-ang University College of Medicine, Korea)
Chung-Kee Chough (The Catholic University of Korea College of Medicine, Korea)

13:10-13:22

[SY08-1]

The Evolution of MIS Techniques for the Treatment of Spine and Brain with Enhanced VISUALIZATION and A.I

Anthony Yeung (DISC (Desert Institute for Spine Care), USA)

13:22-13:34

[SY08-2]

Advances in Lumbar Endoscopic Spine Surgery

Hyun-Jin Park (Hallym University College of Medicine, Korea)

13:34-13:46

[SY08-3]

Advanced in Endoscopy for Lumbar Foraminal Stenosis

Dae-Jung Choi (Himnaera Hospital, Korea)

13:46-13:58

[SY08-4]

Advances in Cervical Endoscopic Spine Surgery

Seok-Bong Jung (Jinju Bon Hospital, Korea)

13:58-14:10

[SY08-5]

High Complexity Endoscopic Spine Surgery for Complex Cases

Junseok Bae (Wooridul Spine Hospital, Korea)

14:10-14:22

[SY08-6]

Future of Spinal Endoscopy

Kai-Uwe Lewandrowski (Center for Advanced Spine Care of Southern Arizona, USA)

14:22-14:40

Discussion

14:40-14:45

Break



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Abstracts

AUGUST 18 (Friday)

14:45-16:00 [SY09] Symposium 9 **3F,
Room A**
Advances in Spinal Tumor: What's New? What's Coming?

Chairs Naresh Kumar (National University Hospital, Singapore)
 Young Hoon Kim (The Catholic University of Korea College of Medicine, Korea)
 Woo-Kyung Kim (Gachon University College of Medicine, Korea)

14:45-14:57 **[SY09-1]**
Collaborative Multicenter Studies on Spinal Cord Intramedullary Tumors and AVMs in Japan: Advancing Diagnosis, Treatment, and Understanding
 Toshiki Endo (Tohoku Medical and Pharmaceutical University, Japan)

14:57-15:09 **[SY09-2]**
Surgery on Spine Metastasis over the Last 4 Decades - An Overview of Techniques and Strategy in Cancer Treatment
 Christian Mazel (University Paris Nord Sorbonne, France)

15:09-15:21 **[SY09-3]**
Oligometastasis: Definition and Surgical Strategy
 Hyoungmin Kim (Seoul National University College of Medicine, Korea)

15:21-15:33 **[SY09-4]**
The Predictive Value of the Spinal Instability Neoplastic Score (SINS)
 Sun Ho Lee (Sungkyunkwan University School of Medicine, Korea)

15:33-15:45 **[SY09-5]**
Surgical Tips and Pearls for Intramedullary Spinal Cord Tumors
 Keung Nyun Kim (Yonsei University College of Medicine, Korea)

15:45-16:00 **Discussion**

AUGUST 18 (Friday)

14:45-16:00

[SY10] Symposium 10

Cutting Edge of Novel Technology in Spine Surgery

3F,
Room B

Chairs John Yunseo Choi (Spine Ortho Clinic, Australia)
Yung Park (National Health Insurance Service Ilsan Hospital, Korea)
Insoo Kim (Keimyung University School of Medicine, Korea)

14:45-14:57

[SY10-1]

Transforming Spine Surgery with the Metaverse: Can It be a Game-Changer in Healthcare?

Wataru Narita (Kameoka City Hospital, Japan)

14:57-15:09

[SY10-2]

The MAGNAV System: A New Generation of Navigated Steerable Micro-Invasive Decompression Approach for the First Time an Accurate Safe and Effective Micro-Invasive Decompression

Hansen A. Yuan (SUNY Upstate Medical University, USA)

15:09-15:21

[SY10-3]

Machine-Learning Model for Accurately Evaluating Preoperative and Postoperative Condition of Spine Surgery

Gun Woo Lee (Yeungnam University College of Medicine, Korea)

15:21-15:33

[SY10-4]

Pearls and Pitfalls of O-arm Navigation Guided Pedicle Screw Placement

Jae Hwan Cho (University of Ulsan College of Medicine, Korea)

15:33-15:45

[SY10-5]

Augmented Reality Assisted Pedicle Screw Fixation

Sang-Min Park (Seoul National University College of Medicine, Korea)

15:45-16:00

Discussion



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Abstracts

AUGUST 18 (Friday)

14:45-15:15 [FP21] Free Paper 21
Miscellaneous 5

5F,
Room C

Chairs Gabriel Liu Ka Po (National University Hospital, Singapore)
 Sang-Min Park (Seoul National University College of Medicine, Korea)
 Il Sup Kim (The Catholic University of Korea College of Medicine, Korea)

14:45-14:50 **[FP21-1]**
The Radiographic Assessments of Spino-Pelvic Compensation Using IoT-Based Real-Time Ischial Pressure Adjustment
 Min-Cheol Seok (Inje University Ilsan Paik Hospital, College of Medicine, Korea)

14:50-14:55 **[FP21-2]**
Spondylitis Treated with Best Effort of Conservative Therapy
 Ryoo Fujisawa (Teine Keijinkai Hospital, Japan)

14:55-15:00 **[FP21-3]**
Comparative Experimental Study on Changes in Serum Bone Turnover Markers and Bone Mineralized Density According to Osteoporosis Drugs after Bony Manipulation in Rabbit Model
 Ji-Won Kwon (Yonsei University College of Medicine, Korea)

15:00-15:05 **[FP21-4]**
Could a Simple X-Ray be a Screening Tool for Thoracic Ossification of Ligamentum Flavum?
 Hyungjoo Kwon (Nowon Eulji Medical Center, Korea)

15:05-15:15 **Discussion**

AUGUST 18 (Friday)

15:15-15:45

[FP22] Free Paper 22
Cervical Degenerative 1

5F,
Room C

Chairs Claudius Thomé (Medical University Innsbruck, Germany)
 Jae Jun Yang (Dongguk University Medical School, Korea)
 Dong-Wook Son (Pusan National University School of Medicine, Korea)

15:15-15:20

[FP22-1]

Foraminal Decompression Technique during ACDF for Cervical Radiculopathy that Provides a Better Outcome: Total Uncinectomy vs. Partial Uncoforaminotomy

JooYoung Lee (Dong-A Medical Center, University of Dong-A College of Medicine, Korea)

15:20-15:25

[FP22-2]

Impact of Uniformly Right-Side Opening Laminoplasty on Postoperative C5 Palsy in Patients with Degenerative Cervical Myelopathy

Kyung-Chung Kang (Kyung Hee University Hospital, Korea)

15:25-15:30

[FP22-3]

Shoulder Traction as a Possible Risk Factor for C5 Palsy in Anterior Cervical Surgery: 8 Cadaveric Study

Junhan Kwon (Yonsei University, Korea)

15:30-15:35

[FP22-4]

Lateral Deviation of the Hyoid Bone and Thyroid Cartilage Influences Prevertebral Soft Tissue Swelling and Dysphagia after Anterior Cervical Discectomy and Fusion

Jun-Young Choi (Dongguk University Ilsan Hospital, Korea)

15:35-15:45

Discussion



Scan to view
Abstracts

AUGUST 18 (Friday)

15:45-16:15 [FP23] Free Paper 23
Cervical Degenerative 2

5F,
Room C

Chairs Warat Tassanawipas (Praram 9 Hospital, Thailand)
 Kyung-Soo Suk (Yonsei University College of Medicine, Korea)
 Choonghyo Kim (Kangwon National University School of Medicine, Korea)

15:45-15:50 **[FP23-1]**
Radiographical Pattern Following Multi-Level Anterior Cervical Discectomy and Fusion: 'Bony Buttress Formation'

Chang Hwa Ham (Korea University Guro Hospital, Korea)

15:50-15:55 **[FP23-2]**
The Changes in Neck Range of Motion after Laminoplasty According to Cervical Foraminal Stenosis

Woo-Seok Jung (National Health Insurance Service Ilsan Hospital, Korea)

15:55-16:00 **[FP23-3]**
Comparative Analysis of Surgically Treated Cervical Calcium Pyrophosphate Dihydrate Deposition Versus Cervical Ossification of the Yellow Ligament Presenting with Myelopathy

Patrick Timtiman (Gangnam Severance Hospital, Yonsei University College of Medicine, Philippines)

16:00-16:05 **[FP23-4]**
Reciprocal Changes in Radiological Parameters of Patients after Expansive Open-Door Laminoplasty: Preoperative Cervical Lordosis Is Inconsequential in K-Line Positive Cases

Junseung Lee (Inje University Haeundae Paik Hospital, Korea)

16:05-16:15 **Discussion**

AUGUST 18 (Friday)

16:15-16:45

[FP24] Free Paper 24 Lumbar Degenerative 1

5F,
Room C

Chairs Anthony Yeung (DISC (Desert Institute for Spine Care), USA)
Byung-Joon Shin (Soonchunhyang University College of Medicine, Korea)
Jae Keun Oh (Hallym University College of Medicine, Korea)

16:15-16:20

[FP24-1]

Evaluation of the Efficacy and Safety of 3D Printing Porous Titanium Cage with Non-Window Versus Window Type in a Single-Level Posterior Lumbar Interbody Fusion: A Prospective, Randomized, Multicenter Study

Dae-Woong Ham (Chung-Ang University Hospital, Korea)

16:20-16:25

[FP24-2]

Acute Phase Side Effects of Escherichia Coli-Derived Bone Morphogenetic Protein-2 in Lumbar Fusion Surgery

Hee Jung Son (Nowon Eulji Medical Center, Eulji University School of Medicine, Korea)

16:25-16:30

[FP24-3]

The Evaluation of Feasibility of Psoas, Paraspinal, and Gluteal Muscle Index as a Predictor for Diagnosing Sarcopenia in Patients with Degenerative Lumbar Disease

Dae-Woong Ham (Chung-Ang University Hospital, Korea)

16:30-16:35

[FP24-4]

Deep Learning Model for Prediction of OVF Collapse

Sung Bae Park (Seoul National University Boramae Medical Center, Korea)

16:35-16:45

Discussion



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Abstracts

AUGUST 18 (Friday)

16:45-17:15 [FP25] Free Paper 25
Lumbar Degenerative 2

5F,
Room C

Chairs Mathan Sakti Yudha (Gadjah Mada University, Indonesia)
 Whan-Jeang Kim (Daejeon Hankook Hospital, Korea)
 Ki-Jung Kim (Seoul National University College of Medicine, Korea)

16:45-16:50 **[FP25-1]**
Effect of Bone Morphogenetic Protein (BMP) on Time-to-Fusion after One-Level Transforaminal Lumbar Interbody Fusion Surgery (TLIF) Based on the Difference of Bone Density
 Sang-Ho Kim (National Health Insurance Service Ilsan Hospital, Korea)

16:50-16:55 **[FP25-2]**
Mini-Open Intercostal Retroperitoneal Approach for Upper Lumbar Spine Lateral Interbody Fusion
 Dong Wuk Son (Pusan National University Yangsan Hospital, Korea)

16:55-17:00 **[FP25-3]**
Subsidence after L5-S1 Transforaminal Lumbar Interbody Fusion (TLIF) Using 3D-Printed Porous Titanium Interbody Cage; Single Institution Case Series
 Jungwoo Hur (Eunpyeong St.Mary's Hospital, The Catholic University of Korea, Korea)

17:00-17:05 **[FP25-4]**
The Influence of Rheumatoid Arthritis on Higher Reoperation Rates over Time Following Lumbar Spinal Fusion: A Nationwide Cohort Study
 Jin-Sung Park (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea)

17:05-17:15 **Discussion**

17:00 Cocktail Reception

3F,
Lobby

18:00 Gala Dinner

3F,
Room A+B

AUGUST 19 (Saturday)

08:00-08:30

[FP26] Free Paper 26 Cervical Degenerative 3

3F,
Room A

Chairs Vit Kotheeranurak (Chulalongkorn University & King Chulalongkorn Memorial Hospital, Thailand)
Jin-Sung Park (Sungkyunkwan University School of Medicine, Korea)
Moon-Jun Sohn (Inje University College of Medicine, Korea)

08:00-08:05

[FP26-1]

The Effect of Posterior Cervical Laminoplasty with Dome Laminotomy on Cervical Alignment and Disability in Patients with Cervical Spondylotic Myelopathy Patients

Sung Hoon Choi (Hanyang University Hospital, Korea)

08:05-08:10

[FP26-2]

Preliminary RCT Results Comparing Allograft and Novomax Cage in Anterior Cervical Discectomy and Fusion

Yanting Liu (Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea)

08:10-08:15

[FP26-3]

Effectiveness of Nasotracheal Intubation in Anterior Cervical Surgery Including C3 Lesions

Woonghee Han (Soonchunhyang Univ. Hospital, Korea)

08:15-08:20

[FP26-4]

Comparison of Basic Characteristics and Postoperative Outcomes of Patients with Cervical Myelopathy at an Early Age (<45 Years Old); How Is It Different from Conventional Myelopathy?

Yung Hong Lee (Hallym University Sacred Heart Hospital, Hallym University College of Medicine, Korea)

08:20-08:30

Discussion



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Abstracts

AUGUST 19 (Saturday)

08:00-08:30 [FP27] Free Paper 27
Emerging Technologies & Techniques 2

**3F,
Room B**

Chairs Pham Anh Tuan (Nguyen Tri Phuong Hospital, Vietnam)
Eung Ha Kim (Dong-gang Hospital, Korea)
Sung-Uk Kuh (Yonsei University College of Medicine, Korea)

08:00-08:05 **[FP27-1]**
Transpedicular Intravertebral Augmentation Using Expandable Cage in Kummell Disease: A Novel Anterior Column Support Technical Note
Kwang-Sup Song (Chung-Ang University Hospital, College of Medicine, Chung-Ang University, Korea)

08:05-08:10 **[FP27-2]**
Surgical Complications and Incomplete Canal Widening of the Vertebral Body Sliding Osteotomy to Treat Cervical Myelopathy
Sung Tan Cho (Ilsan Paik Hospital, Inje University, Korea)

08:10-08:15 **[FP27-3]**
Early-Stage Chronic Venous Disorder as a Cause of Leg Pain Overlooked for Lumbar Spinal Disease
DongHoon Yang (Pohang Stroke and Spine Hospital, Korea)

08:15-08:20 **[FP27-4]**
Diagnosis of Traumatic Thoracolumbar Fracture Using Deep Learning Model with CT
Han Dong Lee (Ajou University, School of Medicine, Korea)

08:20-08:30 **Discussion**

AUGUST 19 (Saturday)

08:30-09:00

[FP28] Free Paper 28
Cervical Degenerative 4

3F,
Room A

Chairs Toshiki Endo (Tohoku Medical and Pharmaceutical University, Japan)
 Byung-ho Lee (Yonsei University College of Medicine, Korea)
 Jae Taek Hong (The Catholic University of Korea College of Medicine, Korea)

08:30-08:35

[FP28-1]

Cervical Foraminal Stenosis as a Risk Factor for Cervical Kyphosis Following Cervical Laminoplasty

Joonoh Seo (Yonsei University Wonju College of Medicine, Korea)

08:35-08:40

[FP28-2]

Bladder and Bowel Dysfunction in Patients with Spinal Compressive Myelopathy

Jea Seok Park (Inje University Haeundae Paik Hospital, Korea)

08:40-08:45

[FP28-3]

Clinical and Radiologic Outcomes of Anterior Sliding Osteotomy and Fusion (ASDF): A Single Center Experience

Donghun Kim (Eunpyeong St. Mary's Hospital, Korea)

08:45-08:50

[FP28-4]

Restoration of Range of Motion Following Cervical Arthroplasty for Treatment of Severe Cervical Disc Degenerative Diseases: A 1-Year Follow-Up Study

Yi-Syue Tsou (Taipei Medical University, Taiwan)

08:50-09:00

Discussion



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Abstracts

AUGUST 19 (Saturday)

08:30-09:00 [FP29] Free Paper 29 **3F,**
Room B
Emerging Technologies & Techniques 3

Chairs Weerasak Singhatanadgige (King Chulalongkorn Memorial Hospital, Thailand)
 Sung-Soo Kim (Inje University College of Medicine, Korea)
 Soobin Im (Soonchunhyang University College of Medicine, Korea)

08:30-08:35 **[FP29-1]**
Advantages of L5 Lamina Hook in Surgical Correction for Adult Spinal Deformity and Its Indications
 Billy Francis Hung (Kyung Hee University Hospital at Gangdong, Kyung Hee University, Philippines)

08:35-08:40 **[FP29-2]**
Advantage of Single-Position Oblique Lumbar Interbody Fusion with Percutaneous Pedicle Screw Instrumentation
 Min-Gu Jang (Konyang University Hospital, Korea)

08:40-08:45 **[FP29-3]**
Detection of Cervical Foraminal Stenosis from Oblique Radiograph Using Convolutional Neural Network Algorithm
 Sehan Park (Asan Medical Center, University of Ulsan College of Medicine, Korea)

08:45-08:50 **[FP29-4]**
Three-Dimensional Quiz-Game-Based Education for Spine Surgical Workforces
 Seon-Jin Yoon (Severance Hospital, Korea)

08:50-09:00 **Discussion**

09:00-09:30 **Refreshment Break with Exhibits**

AUGUST 19 (Saturday)

09:30-10:45

[SY11] Symposium 11 Osteobiologics for Spine Fusion

3F,
Room A

Chairs Massimo Balsano (University and Hospital Trust, Italy)
Yong-Soo Choi (Kwangju Christian Hospital, Korea)
Youn-Kwan Park (Gachon University College of Medicine, Korea)

09:30-09:42

[SY11-1] Nanotechnology in Spine Surgery

Muhammad Tariq Sohail (Doctors Hosp. & Medical Ctr., Pakistan)

09:42-09:54

[SY11-2] Cell Survival in the Nucleus Pulposus and Affecting Factors: Does Physical Loading Plays Key-Role?

Jun-Seok Lee (The Catholic University of Korea College of Medicine, Korea)

09:54-10:06

[SY11-3] An Overview on the Selection of Osteobiologics

Dae-Chul Cho (Kyungpook National University School of Medicine, Korea)

10:06-10:18

[SY11-4] Basic Research for Intervertebral Disc Diseases; Basics and Clinical Application

Joo Han Kim (Korea University College of Medicine, Korea)

10:18-10:30

[SY11-5] Bench to Bed: Osteobiologics

Sung Bae Park (Seoul National University College of Medicine, Korea)

10:30-10:45

Discussion



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Abstracts

AUGUST 19 (Saturday)

09:30-10:45

[SY12] Symposium 12

Evolution and Development of Interbody Fusion

3F,

Room B

Chairs David Edis (Victorian Orthopaedic Spine Service, Australia)
Jae Hyup Lee (Seoul National University College of Medicine, Korea)
Yong Eun Cho (Suwon Leon Wiltse Memorial Hospital, Korea)

09:30-09:42

[SY12-1]

The Intervertebral Disc - Understanding His Physiology and Challenges in Regeneration or Reconstruction

Christian Mazel (University Paris Nord Sorbonne, France)

09:42-09:54

[SY12-2]

History and Development of Spinal Fusion Techniques

Sung Bum Kim (Kyung Hee University School of Medicine, Korea)

09:54-10:06

[SY12-3]

Interbody Fusion in Spondylolisthesis

Shah Alam (Bangladesh Spine and Orthopedic Hospital, Bangladesh)

10:06-10:18

[SY12-4]

Current and Future of 3D Printing Cage for Better Interbody Fusion

Jeong-Yoon Park (Yonsei University College of Medicine, Korea)

10:18-10:30

[SY12-5]

Clinical Application of Expandable Cages in Lumbar Interbody Fusion

Charles L. Branch (Wake Forest University School of Medicine, USA)

10:30-10:45

Discussion

AUGUST 19 (Saturday)

10:45-11:15

[FP30] Free Paper 30
Lumbar Degenerative 3

3F,
Room A

Chairs Mathan Sakti Yudha (Gadjah Mada University, Indonesia)
Tae Gyun Kim (Wonkwang University School of Medicine, Korea)
Junho Lee (Kyung Hee University School of Medicine, Korea)

10:45-10:50

[FP30-1]

Risk Factors for Adjacent Segment Disease Following L5-Floating Minimally Invasive Oblique Lumbar Interbody Fusion

Dong-Ho Kang (Seoul National University College of Medicine and Seoul National University Hospital, Korea)

10:50-10:55

[FP30-2]

Postoperative MRI Analysis of More than 400 Cases of OLIF: Hidden, But Not to be Overlooked Potential Complications

Suhun Lee (Pusan National University Yangsan Hospital, Korea)

10:55-11:00

[FP30-3]

The Fate of Pre-Existing L5-S1 Degeneration Following Oblique Lumbar Interbody Fusion of L4-L5 and Above

Sam Yeol Chang (Seoul National University College of Medicine and Seoul National University Hospital, Korea)

11:00-11:05

[FP30-4]

A Comparison between Cortical Bone Trajectory Screws and Traditional Pedicle Screws in Patients with Single-Level Lumbar Degenerative Spondylolisthesis: 5 Year Results

Sung-ryul Choi (Yonsei University College of Medicine, Korea)

11:05-11:15

Discussion



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Abstracts

AUGUST 19 (Saturday)

10:45-11:15 [FP31] Free Paper 31 **3F,**
Room B
Endoscopic Technologies & Techniques 5

Chairs Gabriel Liu Ka Po (National University Hospital, Singapore)
 Hyoung-Yeon Seo (Chonnam National University Medical School, Korea)
 Inbo Han (CHA University School of Medicine, Korea)

10:45-10:50 **[FP31-1]**
Ligamentum Flavum Sparing Unilateral Laminotomy for Bilateral Recess Decompression (ULBRD): Surgical Technique and Clinical Results
 Woo-Keun Kwon (Korea University Guro Hospital, Korea University College of Medicine, Korea)

10:50-10:55 **[FP31-2]**
Outcomes of Patient with Lumbar Disc Herniation Undergoing Unilateral Biportal Endoscopic Surgery
 Duong Tran Vu Hoang (Xuyen A General Hospital, Vietnam)

10:55-11:00 **[FP31-3]**
In Vivo Comparison of Positive Microbial Culture by Wound Irrigation Methods: Biportal Endoscopic Versus Open Microscopic Transforaminal Lumbar Interbody Fusion
 Minseok Kang (Anam Hospital, Korea University College of Medicine, Korea)

11:00-11:05 **[FP31-4]**
End Plate Spur: The Forgotten Pathology in Lumbar Foraminal Stenosis and How We Handle It Using BESS(Biportal Endoscopic Spine Surgery)
 Yilun Huang (Seng Kang General Hospital Singapore, Singapore)

11:05-11:15 **Discussion**

AUGUST 19 (Saturday)

11:15-11:45

[FP32] Free Paper 32 Lumbar Degenerative 4

3F,
Room A

Chairs Chan Shik Shim (Wooridul Spine Centre, Healthpoint Hospital, UAE)
Sung-Kyu Kim (Chonnam National University Medical School, Korea)
Jin Hoon Park (University of Ulsan College of Medicine, Korea)

11:15-11:20

[FP32-1]

Different Pathoanatomy of Central Stenosis in Isthmic Lumbar Spondylolisthesis - Intersegmental Stenosis

Hyuk-joon Sohn (Keimyung University Dongsan Hospital, Korea)

11:20-11:25

[FP32-2]

Radiographic and Clinical Outcomes after Stand-Alone Anterior Lumbar Interbody Fusion for Symptomatic L5-S1 Retrolisthesis

Steve Cho (Barrow Neurological Institute, USA)

11:25-11:30

[FP32-3]

A New Grading System for Endplate Spur in Lumbar Foraminal Stenosis

Sung Cheol Park (Bumin Hospital Seoul, Korea)

11:30-11:35

[FP32-4]

Postoperative Urinary Retention after Oblique Lumbar Interbody Fusion Under the Systematic Management Protocol

Hangeul Park (Seoul National University Hospital, Korea)

11:35-11:45

Discussion



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Abstracts

AUGUST 19 (Saturday)

**11:15-11:45 [FP33] Free Paper 33
MIS 5**

**3F,
Room B**

Chairs Pham Anh Tuan (Nguyen Tri Phuong Hospital, Vietnam)
 Ho-Jin Lee (Chungnam National University College of Medicine, Korea)
 Dae-Chul Cho (Kyungpook National University School of Medicine, Korea)

11:15-11:20 **[FP33-1]**
Factors Affecting Restoration of the Segmental Lordosis after Lateral Access Spinal Surgery

Hae-Dong Jang (Soonchunhyang University Bucheon Hospital, Korea)

11:20-11:25 **[FP33-2]**
When Would One Not Do MIS Surgery in Metastatic Spine Surgery?

Naresh Kumar (National University Hospital, Singapore)

11:25-11:30 **[FP33-3]**
Comparison of Paraspinal Muscle Degeneration and Clinical Outcome between Posterior Lumbar Interbody Fusion with Supplement Interspinous Process Fixation and Conventional Open Transforaminal Lumbar Interbody Fusion in Low-Grade Lumbar Spondylolisthesis

Jiun-Cheng Shiu (An-Nan Hospital-China Medical University, Taiwan)

11:30-11:35 **[FP33-4]**
Clinical Outcomes of Kyphoplasty in the Treatment of Osteoporotic Vertebral Fractures - Could It Possibly Advance the Priority ?

Ruey-Mo Lin (AnNan Hospital, China Medical University, Taiwan)

11:35-11:45 **Discussion**

11:45-12:00 Adjourn

**3F,
Room A**

E-POSTER

E-POSTER

ADULT SPINAL DEFORMITY

- EP01-01** A Validation Study of 4 Preoperative Surgical Planning Tools in Terms of Proximal Junctional Kyphosis and Clinical Outcome in Adult Spinal Deformity Surgery
Se-Jun Park (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea)
- EP01-02** Uppermost Instrumented Vertebra-Pelvic Tilt Angle: A New Radiographic Parameter for Prediction of Proximal Junctional Failure in Patients Undergoing Thoracolumbar Fusion for Adult Spinal Deformity
Se-Jun Park (Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea)
- EP01-03** Midline Muscle-Sparing Approach for Circumferential Minimally Invasive Spine Surgery (cMIS) in Adult Spinal Deformity (ASD) Correction
Neel Anand (Cedars-Sinai Medical Center, USA)
- EP01-04** An Anterior Supplemental Screw Can Prevent Anterior Cage Migration in Oblique Lateral Interbody Fusion at L5-S1
Hee-Woong Chung (Ajou University Hospital, Korea)
- EP01-06** Defining Whole Spine Sagittal Alignment Parameters in Normal 3666 Population Using Machine Learning
Sung Hyun Noh (Ajou University Hospital, Korea)
- EP01-07** Defining Spino-Pelvic Alignment in Adult Population over 60 Years Old: Prospective Analysis of 214 Volunteers
Sung Hyun Noh (Ajou University Hospital, Korea)
- EP01-08** Surgical Sequence in Anterior Column Realignment with Posterior Osteotomy Is Important for Correction Degree of Adult Spinal Deformity
Xiongjie Li (Kyung Hee University Hospital at Gangdong, Kyung Hee University, China)



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E-POSTER

- EP01-09** **The Criteria of Severe Dynamic Sagittal Imbalance in Adult Spinal Deformity and Its Importance**
 Sung-Min Kim (Kyung Hee University Hospital at Gangdong, Kyung Hee University, Korea)
- EP01-10** **Surgical Strategy-Oriented Classification for the Patients with Severe Dynamic Sagittal Imbalance**
 Sung-Min Kim (Kyung Hee University Hospital at Gangdong, Kyung Hee University, Korea)
- EP01-11** **Analysis of the Cement Distribution Pattern and Other Risk Factors that Affect the Incidence of Recompression Fractures of Vertebral Bodies after Vertebroplasty or Kyphoplasty**
 Siyeon Kim (Gachon University, Gil Medical Center, Korea)
- EP01-12** **Posterior Thoracic Interbody Fusion - When Is It Useful**
 Min-Gyu Lee (Keimyung University Dongsan Hospital, Korea)
- EP01-13** **Sagittal Parameters of Spine and Pelvis in Young Adults Using the EOS Imaging System: Prospective Study of 92 Asymptomatic Subjects**
 Min-Gu Jang (Konyang University Hospital, Korea)
- EP01-14** **Surgical Treatment of Kimmerle Anomaly: Early Research Results**
 Mansur Aliev (Samarkand State Medical University, Uzbekistan)
- EP01-15** **Risk Factor Analysis of Distal Junctional Failure after Long Level Posterior Cervical Surgery and Instrumentation**
 Donghun Kim (Eunpyeong St. Mary's Hospital, Korea)

BIOLOGICS

- EP02-01** **Which Model Is Advantageous for Observing Apoptosis or Autophagy, Saline Injection, or External Fixator in Intervertebral Disc Degeneration?**
 Abdul Khaleque (Catholic University of Korea, Bangladesh)

E-POSTER

CERVICAL DEGENERATIVE

- EPO3-01** Cervical Kinematic Change after Posterior Full-Endoscopic Cervical Foraminotomy for Disc Herniation or Foraminal Stenosis
Chi Heon Kim (Seoul National Univeristy Hospital, Korea)
- EPO3-02** Establishing a Relationship Using CT between Facet Distraction and Clinical Outcomes after ACDF
JooYoung Lee (Dong-A Medical Center, University of Dong-A College of Medicine, Korea)
- EPO3-04** Does Posterior Cord Compression by Ligamentum Flavum Adversely Affect Clinical Outcome of Anterior Cervical Discectomy and Fusion?
Sehan Park (Asan Medical Center, University of Ulsan College of Medicine, Korea)
- EPO3-05** Posterior Preventive Foraminotomy before Laminectomy Com-Bined with Pedicle Screw Fixation May Decrease the Incidence of C5 Palsy in Complex Cervical Spine Surgery in Patients with Severe Myeloradiculopathy
Yong-Ho Lee (Yonsei University College of Medicine, Korea)
- EPO3-07** Does Titanium Mesh Cage Location Affect Subsidence after Single-Level Anterior Cervical Corpectomy and Fusion? A Minimum 2-Year Follow-Up Study
Sung Hyun Noh (Ajou University Hospital, Korea)
- EPO3-08** Morphologic Change of Corticocancellous Allograft Used for Anterior Cervical Discectomy and Fusion
Jun-Young Choi (Dongguk University Ilsan Hospital, Korea)
- EPO3-09** Which Radiographic Parameter Can Aid in Deciding Optimal Allograft Height for Anterior Cervical Discectomy and Fusion?
Jun-Young Choi (Dongguk University Ilsan Hospital, Korea)
- EPO3-10** Surgical Outcomes of Extensive Dome-Like Laminoplasty Using En Bloc Resection of C2 Inner Lamina for Patients with Severe Cord Compression Behind C2 Body
Se-Hwan Park (Kyung Hee University Hospital, Korea)



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E-Poster

E-POSTER

- EPO3-12** **Bicortical Laminal Screws for Posterior Fixation of Subaxial Cervical Spine: A Radiologic Analysis with Computed Tomography Images**
Eugene Park (Kyungpook National University Hospital, Korea)
- EPO3-13** **Identifying Risk Factors for Prevertebral Soft Tissue Swelling after Single-Level Anterior Cervical Discectomy and Fusion (ACDF)**
Byeong-Jin Ha (Hanyang University Guri Hospital, Korea)
- EPO3-14** **More than Three Continuous Segments of Ossification of Posterior Longitudinal Ligament Is Protective Against Postoperative Kyphosis Progression Following Laminoplasty**
Sungjae An (Korea University Anam Hospital, Korea)

EMERGING TECHNOLOGIES & TECHNIQUES

- EPO4-01** **Screw Placement for Extremely Small Lumbar Pedicles in Scoliosis**
JooYoung Lee (Dong-A Medical Center, University of Dong-A College of Medicine, Korea)
- EPO4-04** **3D Printing in Spinal Surgery: Current and Future**
Eugene Park (Kyungpook National University Hospital, Korea)
- EPO4-07** **Role of Icotec Carbon Fiber Implants for Spine Tumour Disease - A Multicentre Singapore Experience**
Naresh Kumar (National University Health System, Singapore)
- EPO4-08** **Deep Learning Model for Grading Metastatic Epidural Spinal Cord Compression on Staging CT**
Naresh Kumar (National University Health System, Singapore)
- EPO4-09** **Deep Learning Model for Classifying Metastatic Epidural Spinal Cord Compression on MRI**
Naresh Kumar (National University Health System, Singapore)

E-POSTER

EPO4-10 Is It Necessary to Extend Fusion Segment When We Meet Screw Loosening and Nonunion? The Novel Technique of Short Segment Posterior Pedicle Screw Fixation Using Massive Bone Chip Insertion

Chang Duk Yuk (Asan Medical Center, University of Ulsan College of Medicine, Korea)

ENDOSCOPIC TECHNOLOGIES & TECHNIQUES

EPO5-01 Full Endoscopic of Interlaminar Approach for Bilateral Decompression in Lumbar Spinal Canal Stenosis : Evaluation of Clinical and Radiographic Outcome 1 Year Follow Up

Farid Yudoyono (Hasan Sadikin Hospital, Faculty of Medicine, Universitas Padjadjaran, Indonesia)

EPO5-02 Uniportal Full Endoscopic Spinous Process Preserving Laminectomy for Bilateral Decompression in Cervical Stenotic Myelopathy. (5 Level Endoscopic Decompression, 2 Disease Entity, CSM/OPII)

Hyun-Jin Ma (Daegu Wooridul Spine Hospital, Korea)

EPO5-03 Risk Factors Analysis for Inferior Clinical Outcome and Recurrence after Full-Endoscopic Interlaminar Discectomy (FEID) for Lumbar Disc Herniation; A Prospective Observational Study

Jungwoo Hur (Eunpyeong St.Mary's Hospital, The Catholic University of Korea, Korea)

EPO5-05 Two Cases in Which FED to the Thoracic Disc Was Performed without Drilling Bones

Ryoo Fujisawa (Teine Keijinkai Hospital, Japan)

EPO5-06 Oblique Lumbar Interbody Fusion with Selective Biportal Endoscopic Posterior Decompression for Multilevel Lumbar Degenerative Disease

Ki-Han You (Hallym University College of Medicine, Kangnam Sacred Heart Hospital, Korea)

EPO5-07 Removal Technique of Degenerative Epidural Cyst with Biportal Endoscopic Surgery

Dongyun Kim (Saeum Hospital, Korea)



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E-POSTER

- EPO5-09 Unilateral Biportal Endoscopic Extended Decompression of Extraforaminal Stenosis from the L5 Foramen to the Sacral Ala: Technical Note and Clinical Outcome**
Hee Chang Kwon (Wiltse Memorial Hospital, Korea)
- EPO5-10 A Preliminary Report of Foraminal Decompression in Adult Isthmic Spondylolisthesis :Pathoanatomy and Endoscopic Posterior Approach**
Dae-Jung Choi (Himnaera Hospital, Korea)
- EPO5-11 Navigation Guided Endo-TLIF in Degeneration Lumbar Lesion And: Tips and Tricks**
Yi-Hung Huang (Chia Yi Christian Hospital, Taiwan)
- EPO5-12 The Effect of Thrombin-Containing Local Hemostatics on Postoperative Spinal Epidural Hematoma in Biportal Endoscopic Spinal Surgery**
Yongho Kim (Seoul Sacred Heart General Hospital, Korea)
- EPO5-13 Endoscopic Correction of Spinal Sagittal Imbalance**
Won Joong Kim (Synergy Orthopedic Clinic, Korea)
- EPO5-14 Endoscopic Surgery + Flexible Rod = Awesome Results!**
Sangyoup Han (Suwon Leon Wiltse Memorial Hospital, Korea)
- EPO5-15 Percutaneous Endoscopic Thoracic Discectomy ; Case Report of Highly Migrated Thoracolumbar Disc Herniation**
Youngmin Lee (Anyang Wiltse Memorial Hospital, Korea)
- EPO5-16 Full Endoscopic Transpedicular Approach for Highly Migrated Ruptured Disc**
Yongsoo Choi (Wooridul Spine Hospital, Korea)

E-POSTER

LUMBAR DEGENERATIVE

- EPO6-01 Cauda Equina Syndrome Due to Huge Lumbar Disc Herniation**
Ji Soo Moon (Daegu Wooidul Spine Hospital, Korea)
- EPO6-02 Remodeling of the Spinal Canal after Anterior Lumbar Interbody Fusion(ALIF) in Central Spinal Stenosis: Clinical and Radiological Findings**
Dong Hyun Lee (The Leon Wiltse Memorial Hospital, Korea)
- EPO6-04 Effects of the Severity of Stenosis on Clinical Outcomes of Indirect Decompression Using Minimally Invasive Oblique Lumbar Interbody Fusion**
Dong-Ho Kang (Seoul National University College of Medicine and Seoul National University Hospital, Korea)
- EPO6-05 Risk Factors of New Vertebral Fracture after Vertebroplasty for Osteoporotic Vertebral Compression Fracture**
Jong-Hyeok Park (Incheon St. Mary's Hospital, The Catholic University of Korea, Korea)
- EPO6-06 Comparison of Minimally Invasive and Open TLIF Outcomes with more than Seven Years of Follow-Up**
Yoonjoong Hwang (Korea University Ansan Hospital, Korea)
- EPO6-07 Ankle and Toe Weakness Caused by Ligamentum Flavum Calcified Cyst: A Case Report and Literature Review**
Ho-Young Jung (Eunpyeong St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea)
- EPO6-08 Recanalization of External Iliac Artery Occlusion in Patient with Spinal Stenosis Using Medications: A Case Report**
Geon-U Kim (Eunpyeong St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea)
- EPO6-09 The Impact of Instrumented Lumbar Fusion Surgery on Psychiatric Problems in Elderly Patients with Degenerative Spinal Stenosis**
Hee Jung Son (Nowon Eulji Medical Center, Eulji University School of Medicine, Korea)



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E-Poster

E-POSTER

- EPO6-10** **Effect of Short-Level Oblique Lumbar Interbody Fusion Correcting Sagittal Imbalance**
Dong-Ho Kang (Seoul National University College of Medicine and Seoul National University Hospital, Korea)
- EPO6-11** **Analysis of Risk Factors for Early Adjacent Segment Disease Who Underwent Revision Surgery within 5 Years after Lumbar Spinal Fusion**
Taejong Jeong (Sahmyook Seoul Medical Center, Korea)
- EPO6-12** **The Role of the Spine and Pelvic Balance in Determining the Tactics of Surgical Treatment of Lumbar Spondylolisthesis**
Akobir Ibragimov (Republican Specialized Scientific and Practical Medical Center of Neurosurgery, Uzbekistan)
- EPO6-13** **Comparison of Radiologic & Clinical Outcome of Posterior Lumbar Interbody Fusion Using Unilateral Cage with Unilateral Facetectomy and Contralateral Facet Fusion Versus Conventional Posterior Lumbar Interbody Fusion Using Bilateral Cages**
Suk Hyun Hwang (Seoul Red Cross Hospital, Korea)
- EPO6-14** **Spinal Stenosis Cases of Achondroplasia Patient, Case Review**
Seung Jin Choi (Korea University Guro Hospital, Korea)
- EPO6-15** **Open Midline Decompression (OMD) with Ligament Reconstruction for Multi-Level Degenerative Lumbar Spinal Stenosis in Elderly Patients over the Age of 80S**
Sang-Ho Lee (Cheongdam Wooridul Spine Hospital, Korea)
- EPO6-16** **Impact of Social Distancing on Degenerative Spinal Diseases during the Covid-19 Pandemic Period**
Jun-Hoe Kim (Seoul National University Hospital, Korea)
- EPO6-17** **5-Year Radiological Outcomes Post an Interlaminar Device Insertion for Symptomatic Lumbar Spinal Stenosis**
Naresh Kumar (National University Health System, Singapore)

E-POSTER

EPO6-18 A Modified Posterior Lumbar Interbody Fusion Technique Using a Steerable 3D-Printed Titanium Cage with Simultaneous Spinous Process Fixation Device: Single-Institution Case Series

Byeong-Jin Ha (Hanyang University Guri Hospital, Korea)

EPO6-19 Long-Term Clinical and Radiographic Outcome of Instrumented Facet Fusion of Lumbar Spine

Dong Min Seo (Korea University Guro Hospital, Korea)

MATERIAL SCIENCE

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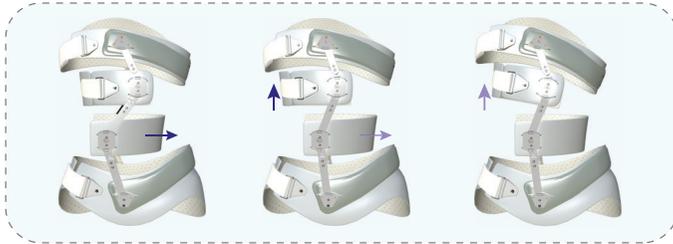
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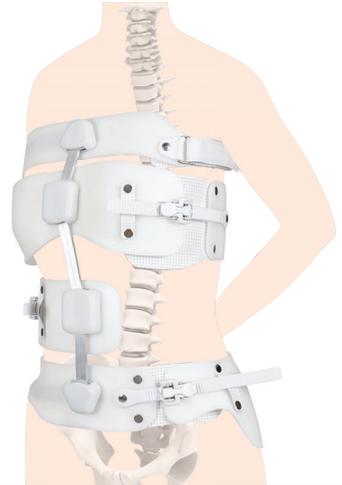


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- 자켓 형식으로 제작하여 착용이 간편
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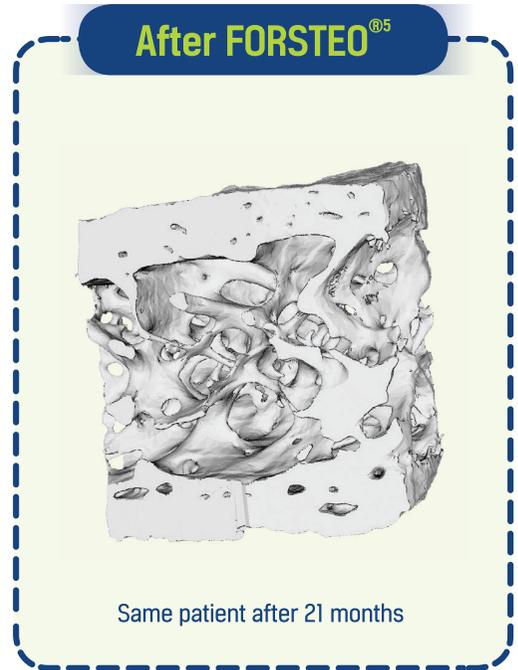
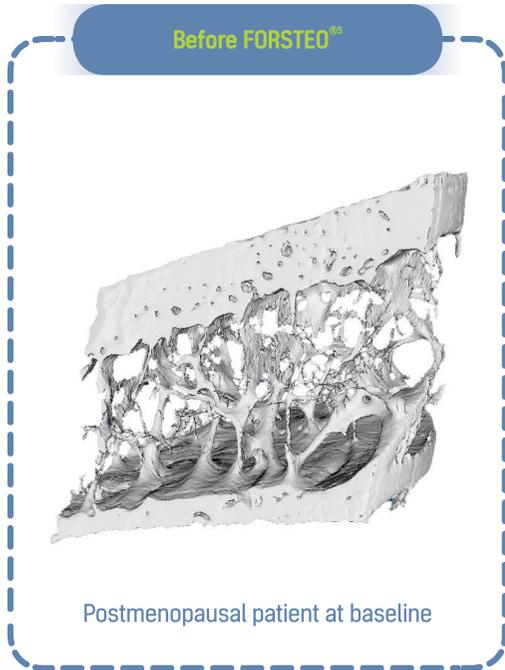
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References 1. Forteo FDA Prescribing Information 2. Neer RM et al, Effect of parathyroid hormone (1-34) on fractures and bone mineral density in postmenopausal women with osteoporosis, N Engl J Med, 2001 May 10;344(19):1434-41, 3. Kleerekoper M et al., Assessing the Effects of Teriparatide Treatment on Bone Mineral Density, Bone Microarchitecture, and Bone Strength, J Bone Joint Surg Am, 2014 Jun 4;96(11):e70, 4. McClung MR et al., Opposite bone remodeling effects of teriparatide and alendronate in increasing bone mass, Arch Intern Med, 2005 Aug 8;225(15):1762-8, 5. Jiang Y et al., Recombinant human parathyroid hormone (1-34) [teriparatide] improves both cortical and cancellous bone structure, J Bone Miner Res, 2003 Nov;18(11):1932-41.

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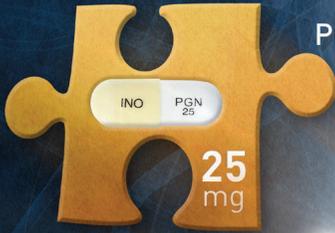
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2. 간질: 성인에서 이차적 전신증상을 동반하거나 동반하지 않은 부분 발작의 보조제
3. 섬유근육통의 치료

용법·용량

이 약은 프레가발린으로서 1일 총 투여용량을 1일 2회로 나누어 음식물과 상관 없이 경구 투여한다. 이 약은 주로 신장으로 배설되므로, 신기능이 저하된 환자에 대해서는 용량이 조절되어야 한다. 1. 신경병증성 통증 1) 말초 신경병증성 통증(성인): 이 약은 시작용량으로 1일 150mg을 투여할 수 있다. 개개 환자에서의 반응과 내약성에 근거하여 3일 내지 7일 후에 1일 300mg까지 증량할 수 있다. 필요하다면 이후 7일 간격으로 1일 최대 600 mg까지 증량할 수 있다. 2) 중추 신경병증성 통증(성인): 이 약은 시작용량으로 1일 150mg을 투여할 수 있다. 개개 환자에서의 반응과 내약성에 근거하여 1주일 후에 1일 300mg까지 증량할 수 있다. 추가로 1주일 후에 목표 1일 용량인 600mg까지 증량할 수 있다. 목표 1

일 용량에서 내약성을 나타내지 않을 경우 용량 감소가 고려될 수 있다. 2. 간질 (성인): 이 약은 시작용량으로 1일 150mg을 투여할 수 있다. 개개 환자에서의 반응과 내약성에 근거하여 일주일 후에 1일 300mg까지 증량할 수 있다. 필요하다면, 이후 7일 간격으로 1일 최대 600mg까지 증량할 수 있다. 3. 섬유근육통: 이 약의 권장 용량은 1일 300mg~450mg 이다. 이 약은 시작 용량으로 75mg 씩 1일 2회(1일 150mg)를 투여하며, 유효성과 내약성에 근거하여 1주일 이내에 150mg씩 1일 2회(1일 300mg) 까지 증량할 수 있다. 1일 300mg의 용량에서 충분한 유효성을 경험하지 못한 환자의 경우에는 1주일 이내에 225mg씩 1일 2회(1일 450mg) 까지 증량할 수 있다. 1일 600mg의 용량에서도 임상 연구가 실시 되었으나, 이 용량에서의 부가적인 유익성이나 충분한 내약성에 대한 증거는 없다. 용량 의존적인 이상반응을 고려하면, 1일 450mg을 초과하는 용량 투여는 권장되지 않는다.

사용상의 주의사항

1. 경고 1) 자살충동과 자살행동 ① 항간질약을 복용한 환자에서 자살충동 또는 자살행동을 보이는 위험성이 증가되므로 항간질약을 치료받은 환자는 자살충동 또는 자살행동, 우울증의 발현 또는 악화 및 기분과 행동의 비정상적 변화에 대하여 모니터링되어야 한다. ② 항간질약을 처방받는 간질과 다른 많은 질병은

그 자체가 이환 및 사망, 치료기간 동안의 자살충동과 자살행동의 위험성증가와 관련된다. 따라서 처방자는 항간질약 처방시 환자의 치료기간 동안 자살충동 또는 자살행동과 치료될 질병간의 연관성 유무 및 이 약의유효성을 함께 고려한다. 2. 다음 환자에게는 투여하지 말 것 1) 프레가발린 또는 이 약의 성분에 과민한 환자 2) 이 약은 유당을 함유하고 있으므로, 갈락토오스 불내성 (galactose intolerance), Lapp 유당분해효소 결핍증 (Lapp lactase deficiency) 또는 포도당-갈락토오스 흡수 장애 (glucose-galactose malabsorption) 등의 유전적인 문제가 있는 환자에게는 투여하면 안 된다.

* 기타 자세한 사항은 제품설명서를 참고하십시오.

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Reference 1. *약제 급여 목록 및 급여 상한금액표,보건복지부 고시 제 2017-146호 (2017년 9월 1일 시행) 2. 카발린캡슐 허가서항

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사용기한: 제조일로부터 2년
저장방법: 1°C~25°C
용량: 3ml / 6ml

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2. Tackett, Scott M., et al. "Real-world outcomes of hemostatic matrices in cardiac surgery." *Journal of cardiothoracic and vascular anesthesia* 28.6 (2014): 1558-1565.



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1) Holt RJ, Fort JG, Grahn AY, et al. Onset and durability of pain relief in knee osteoarthritis: Pooled results from two placebo trials of naproxen/esomeprazole combination and celecoxib. Phys Sportsmed. 2015 Jul;43(3):200-12. 2) Coxib and traditional NSAID Trialists' (CNT) Collaboration. Vascular and upper gastrointestinal effects of non-steroidal anti-inflammatory drugs: meta-analyses of individual participant data from randomised trials. Lancet. 2013 Aug 31;382(9894):769-79. 3) Goldstein JL, Hochberg MC, Fort JG, et al. Clinical trial: the incidence of NSAID-associated endoscopic gastric ulcers in patients treated with PN 400 (naproxen plus esomeprazole magnesium) vs. enteric-coated naproxen alone. Aliment Pharmacol Ther. 2010 Aug;32(3):401-13.



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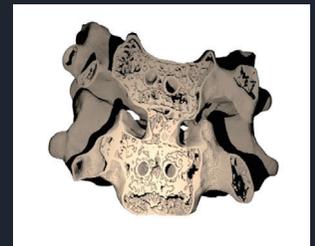
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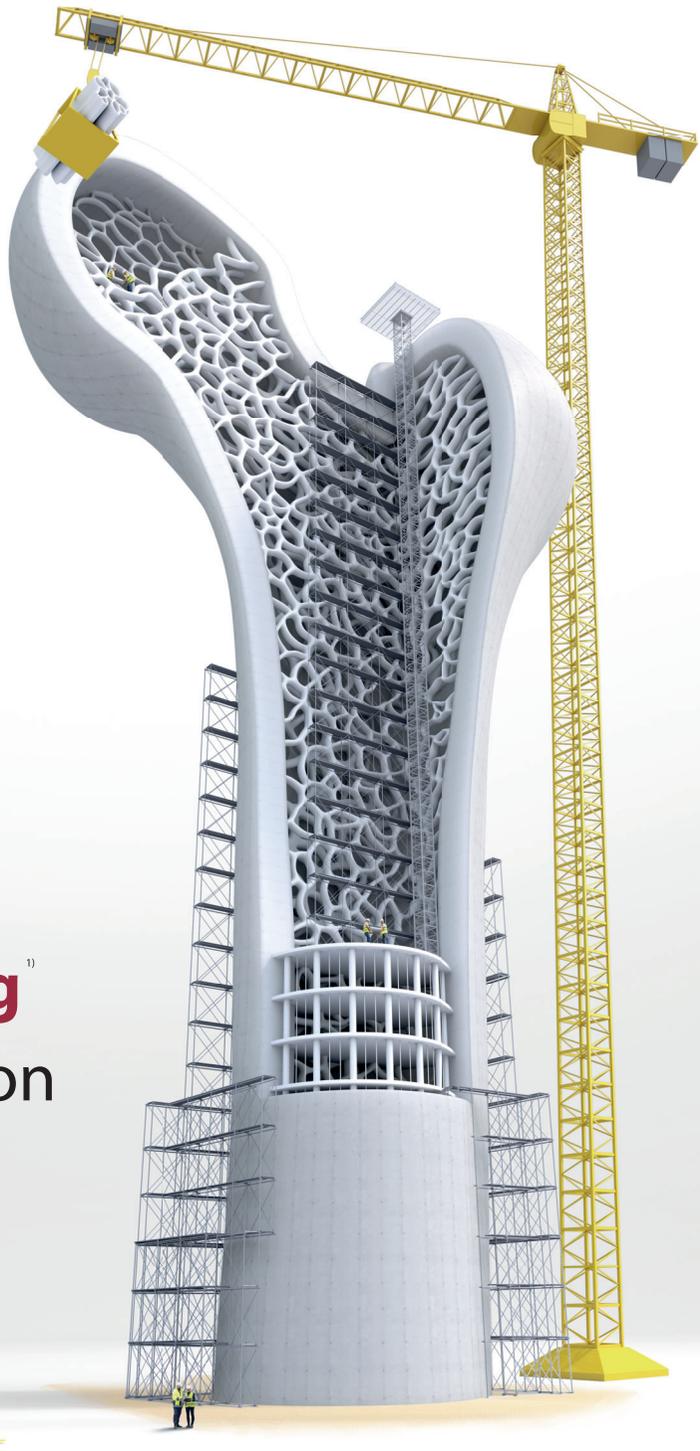


References 1. 리마프로스트를 함유하는 경구용 정제 형태의 약학 조성물. 대한민국특허청. 2010.07.15. (등록번호: 10-2012-0007662)

리마딘정 제품정보

[원료약품 및 분량] 1정(약 100mg) 중 유효성분: 리마프로스트알파덱스(JP) ... 166.67 μ g (리마프로스트로서 5 μ g) **[성상]** 흰색의 원형 정제 **[효능·효과]** 1. 폐색성혈전혈관염(버거병)에 의한 귀양, 동통, 냉감 등의 허혈성 증상의 개선 2. 후천성 요부척추관협착증(SLR시험에서 정상이고, 양측성의 간헐파행을 보이는 환자)에 의한 자각증상(하지동통, 하지저림) 및 보행능력의 개선 * 위의 효능·효과 이외에 다른 용도로 사용 시 이상반응이 나타날 수 있음 **[용법·용량]** 1. 폐색성혈전혈관염(버거병)에 의한 귀양, 동통, 냉감 등의 허혈성 증상의 개선에는 통상 성인 1일 3회, 1회 2정을 경구투여한다. 2. 후천성 요부척추관협착증(SLR시험에서 정상이고, 양측성의 간헐파행을 보이는 환자)에 의한 자각증상(하지동통, 하지저림) 및 보행능력의 개선에는 통상 성인 1일 3회, 1회 1정을 경구투여한다. 연령, 증상에 따라 적절히 증감한다. **[사용상의 주의사항-이상반응]** 1) 과민증 : 때때로 발진, 소양감 등이 나타날 수 있으므로 이러한 경우에는 투여를 중지하는 등의 적절한 조치를 취할 것. 2) 출혈경향 : 드물게 출혈이 나타날 수 있으므로 관찰을 충분히 하여, 이상이 보이는 경우에는 투여를 중지할 것. 3) 소화기계 : 때때로 설사, 구역, 복부불쾌감, 복통, 식욕부진, 가슴쓰림, 드물게 구토, 복부팽만감이 나타날 수 있다. 4) 간장 : 때때로 AST(GOT), ALT(GPT) 상승 등의 간기능 이상이 나타날 수 있다. 5) 순환기계 : 때때로 심계항진, 드물게 사지청색증, 저혈압이 나타날 수 있다. 6) 기타 : 때때로 두통, 안면홍조, 어지러움, 열감, 드물게 전신관태감, 부종, 유선종창, 몸떨림, 하지다모(下肢多毛), 빈혈이 나타날 수 있다.

* 자세한 내용은 제품설명서를 참조하시기 바랍니다.



Remodeling¹⁾



Overflow Modeling¹⁾
Based Bone Formation

Daewon 대원제약

테로사 카트리지주 : [효능효과] 1) 폐경기 이후 여성 및 골절의 위험이 높은 남성에 대한 골다공증의 치료 2) 골절의 위험이 높은 여성 및 남성에 있어서 지속적인 글루코코르티코이드 요법과 관련 된 골다공증의 치료 [용법·용량] 권장용량은 1일 1회 이 약 20 μ g을 대부분 또는 복부에 피하주사 한다. 환자들은 올바른 주사방법에 대하여 교육을 받아야 한다. 환자에게 펜의 정확한 사용을 지도하기 위한 사용자 안내서(user manual)도 있다. 이 약의 투약기간은 최대 24개월이다. 한 환자의 일생에서 이 약의 24개월 과정을 반복해서는 안 된다. 만일 음식섭취가 불충분한 경우에는, 환자들은 칼슘과 비타민D 보충제를 추가적으로 섭취하여야 한다. 이 약의 치료가 끝난 후에는, 환자들은 다른 골다공증 치료를 계속할 수 있다. [사용상의 주의사항] 다음 환자에는 투여하지 말 것 1) 테리파라타이드 또는 이 약의 부형제 성분에 대하여 과민반응 2) 입부 및 수유부 3) 기존의 고칼슘혈증 4) 중증의 신장 기능손상 5) 일차적인 골다공증 이외에 대사성 골 질환 (부갑상선 기능항진증 및 뼈의 Paget's disease 포함) 이 충분히 설명되지 않는 alkaline phosphatase 의 상승 7) 이전에 골격에 방사선 치료를 한 경우 8) 골격 악성종양 또는 골 전이가 있는 환자 * 이 외의 보다 자세한 사항은 테로사 카트리지주 제품설명서 전문을 참조하여 주시기를 바랍니다. [제조사] Richter+Helm Biologics GmbH & Co,KG (Germany) (원료의약품), Gedeon Richter Plc, (Hungary) (완제의약품) [판매사] 대원제약(주) 서울특별시 성동구 천호대로 386 대표번호 : 02-2204-7000 소비자상담실 : 080-497-8272(수신자부담) <http://www.daewonpharm.com> Ref. 1, Dempster, D.W., Zhou, H., Ruff, V.A., Melby, T.E., Alam, J. and Taylor, K.A. (2018), J Bone Miner Res, 33: 627-633.



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용법·용량	주 1회 경구투여 (아침식사 최소 30분 전에 복용하거나 또는 하루 중에 어떤 때라도 음식물이나 음료수의 섭취 전후로 최소 2시간 떨어져서 복용한다)	주 1회 경구투여 (식사와 관계없이 경구투여)	월 1회 경구투여 (충분한 흡수를 위해 하루 중 처음으로 음식물 또는 물 이외의 음료수를 섭취하기 최소 30분 전에 복용한다)
효능·효과	1. 폐경 후 여성의 골다공증 치료와 예방 2. 남성의 골다공증 치료	폐경 후 여성의 골다공증 치료	폐경 후 여성의 골다공증 치료와 예방
약가⁶ (2023. 03. 09 기준)	5,048원/정	5,065원/정	18,714원/정

REFERENCES 1. 식품의약품안전처 리세드론산 제제허가 현황(2023. 4 기준) 2. Harris ST et al. JAMA 1999; 282:1344-1352 3. 악토넬®정 35밀리그램 제품정보(개정년월일: 2017.10.25) 4. 악토넬®EC정 35밀리그램 제품정보(개정년월일: 2017.11.07) 5. 악토넬®정 150밀리그램 제품정보(개정년월일: 2017.10.25) 6. 건강보험심사평가원자료

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OUR MISSION

Viatriis는 헬스케어의 현재가 아닌 앞으로 나아가야 할 미래를 바라봅니다.
Viatriis는 용기있게 행동하며 헬스케어 니즈가 나날이 진화하는 전세계 대상으로
안정적인 서비스를 제공하는 독보적인 기업이 될 것입니다.

**Viatriis는 전 세계 사람들이 삶의 모든 단계에서
더 건강하게 살아갈 수 있도록 힘이 되는 기업입니다.**

다음 3가지를 통해(via) 실천합니다:

ACCESS

어느 지역, 어떤 상황에서도
환자들에게 고품질의 신뢰할 수 있는
의약품 제공

LEADERSHIP

지속가능한 기업 운영 및
환자들의 건강을 개선하는
혁신 솔루션 개발

PARTNERSHIP

통합적 전문성을 활용하여
사람들을 제품 및 서비스에 연결



EXCENDER

Expandable Lumbar interbody spacer

Minimize Disruption

EXCENDER features tapered the distal tip & 8mm initial height.

Restoration

EXCENDER provides restoration of sagittal alignment with up to 20°

Graft delivery

Graft chamber of EXCENDER allows to be packed with bone graft prior to insertion & In-situ Bone graft delivery is available after expansion.



CGBIO
CELL & GROWTH FACTOR
BIOTECHNOLOGY

Medtronic New Product Launch

Infuse™ Bone Graft

Transforming outcomes in lateral procedures.



Adaptix™ Interbody System

nanoLOCK™ Surface Technology

Centerpiece™ 2.0 Plate Fixation System

Smaller screw with a strong hold

(In comparison of Centerpiece™)

