



세브란스 | 용인세브란스병원  
SEVERANCE | YONGIN SEVERANCE HOSPITAL

수술부위감염 감시체계 (KONIS SSI) 온라인 실무자 교육

# 인공관절 치환술의 이해

박준영

연세대학교 의과대학 용인세브란스병원 정형외과



## Introduction

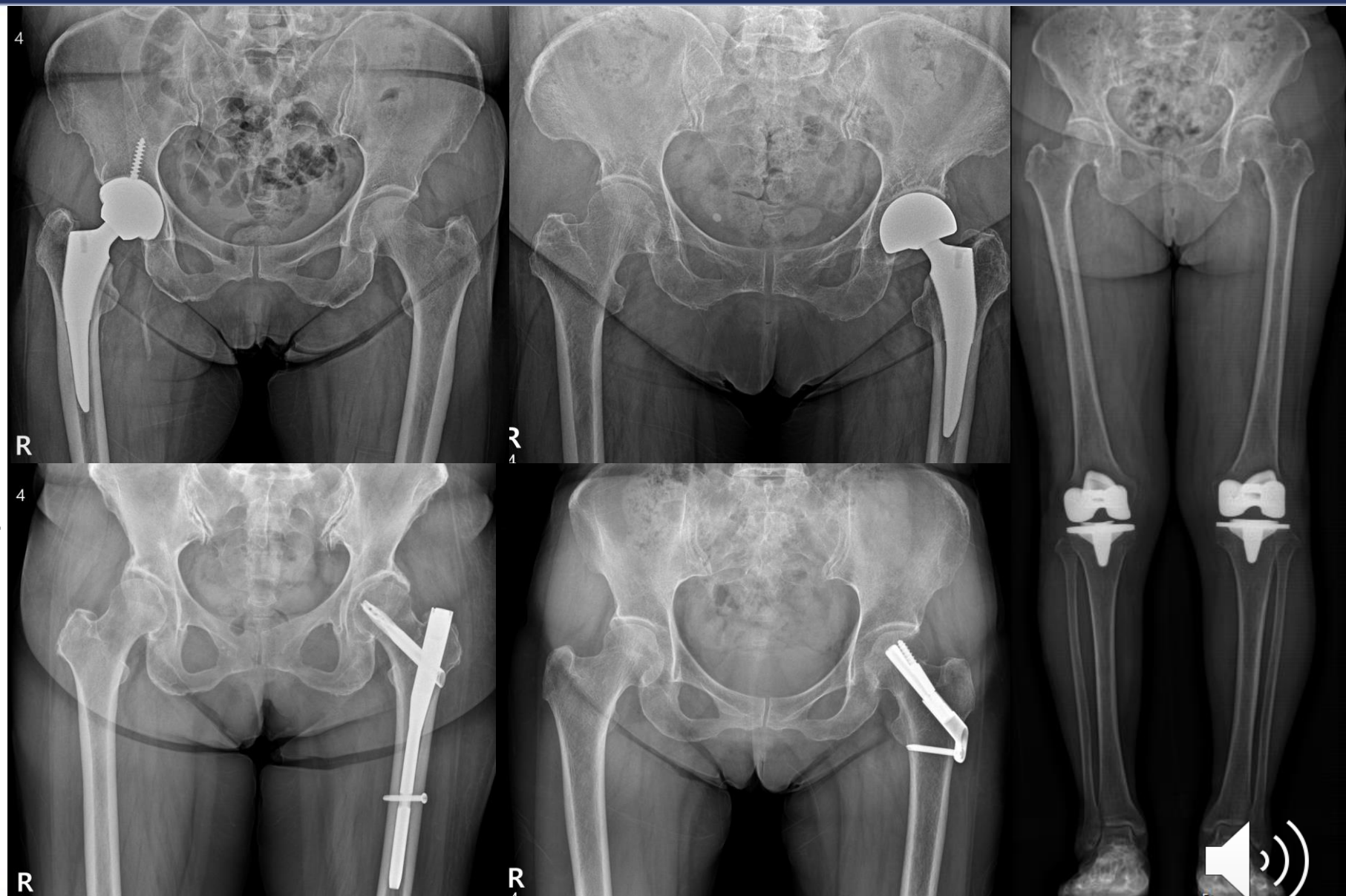
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- 세브란스병원 인턴 / 정형외과 전공의 (2012.3-2017.2)
- 대한민국 육군 군의장교 (2017.4-2020.4)
- 강남세브란스병원 정형외과 전임의 (2020.5-2021.2)
- 세브란스병원 정형외과 임상연구조교수 (2021.3-2022.2)
- 용인세브란스병원 정형외과 인공관절분과 임상조교수 (2022.3-)





## Introduction

- 슬관절 전치환술
- 슬관절 반치환술
- 고관절 전치환술
- 고관절 반치환술
- 고관절 골절 내고정술

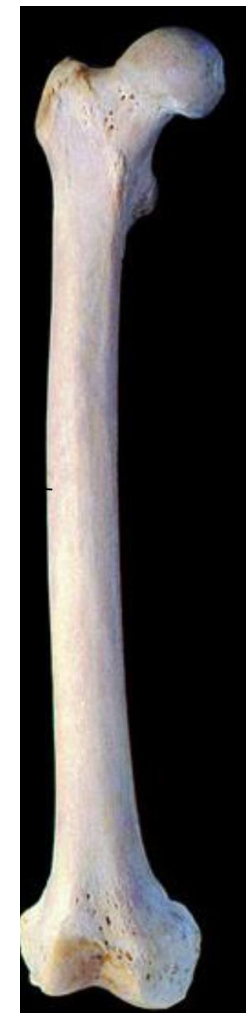
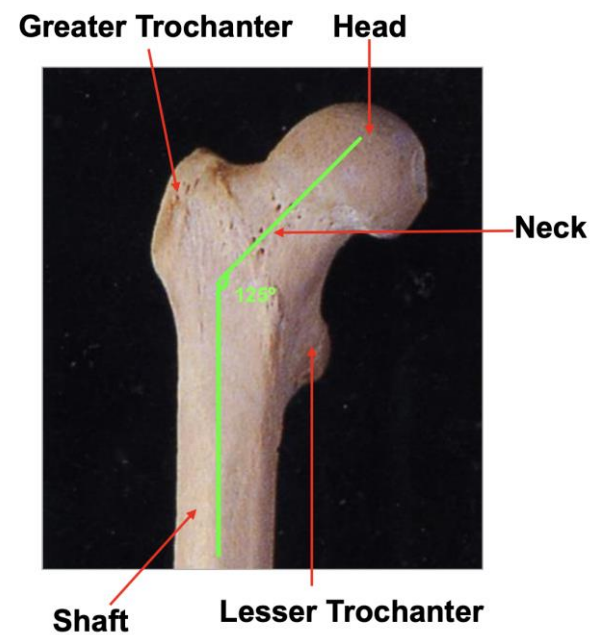
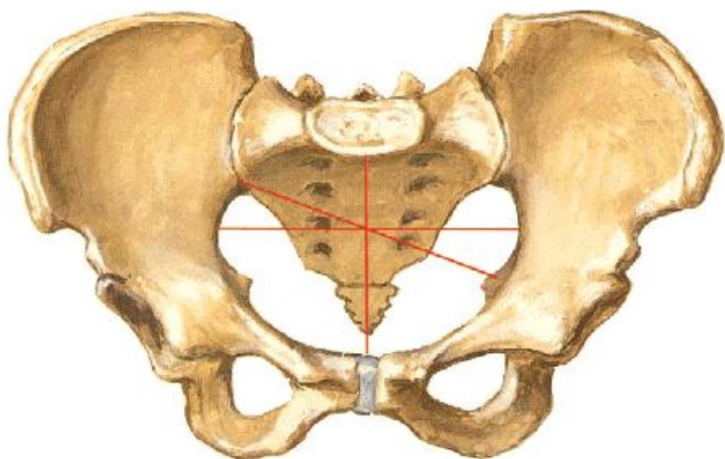




- 골반골 (비구)
- 대퇴골 (대퇴골두)
- 대퇴골 (원위부 관절면)
- 경골 (근위부 관절면)
- 슬개골

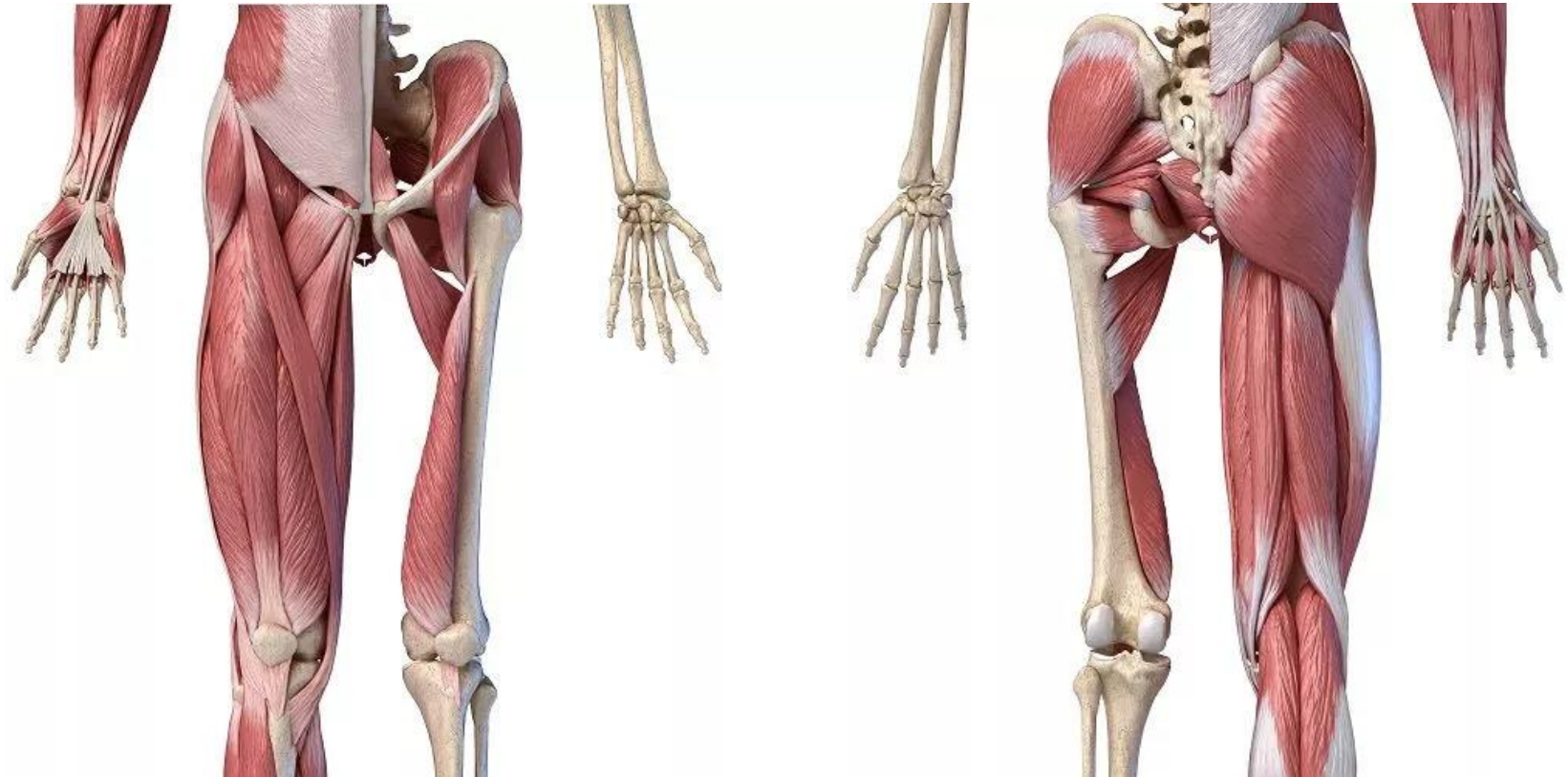
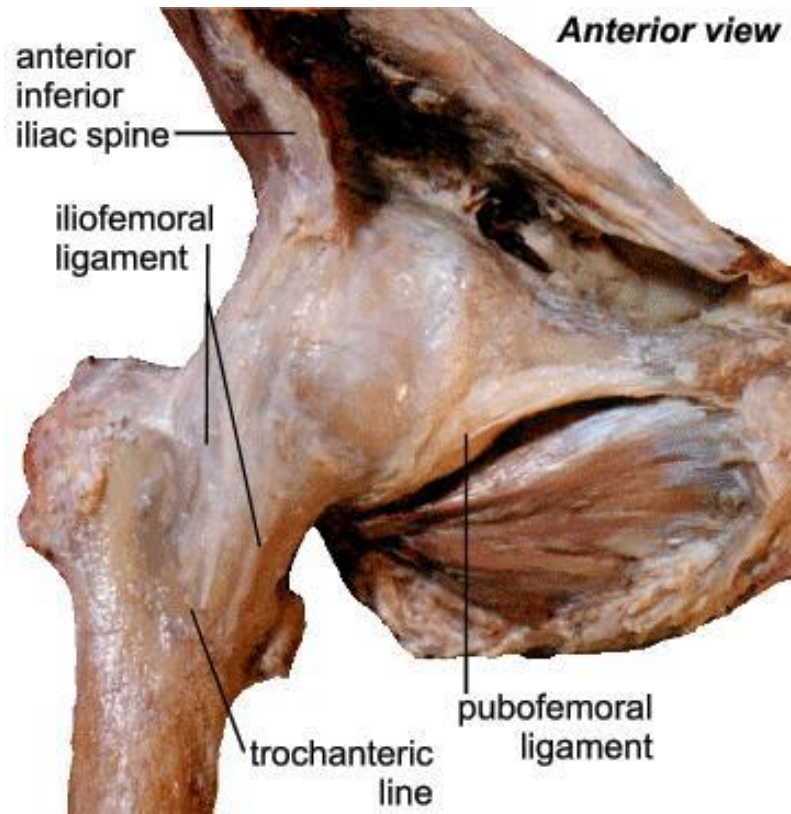


## Hip Joint (고관절)

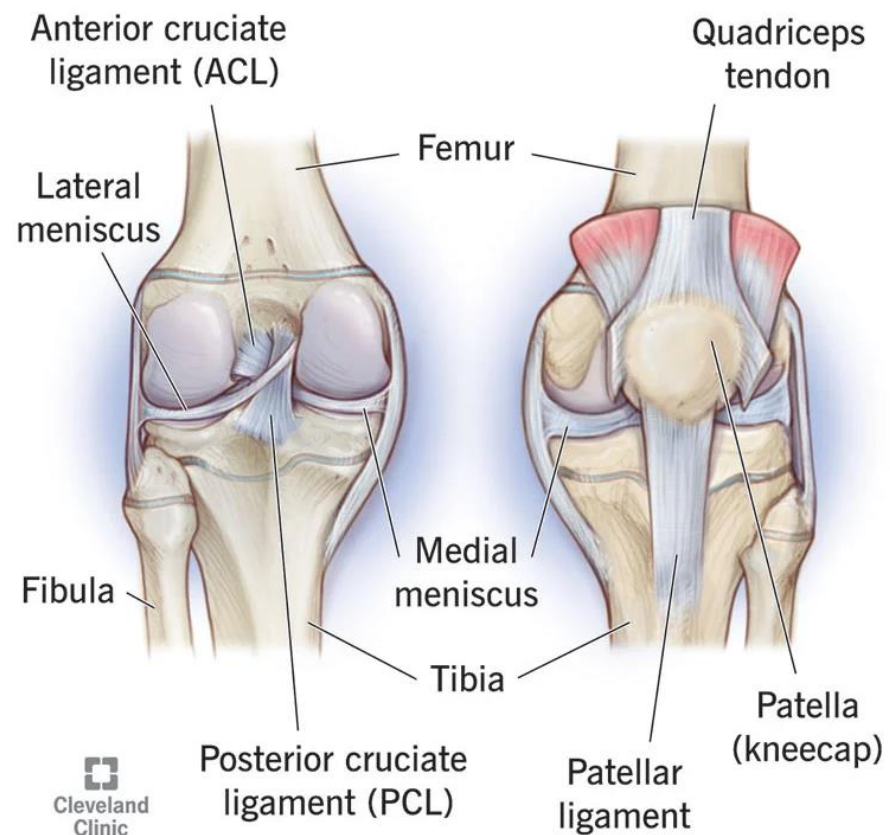




## Hip Joint (고관절)



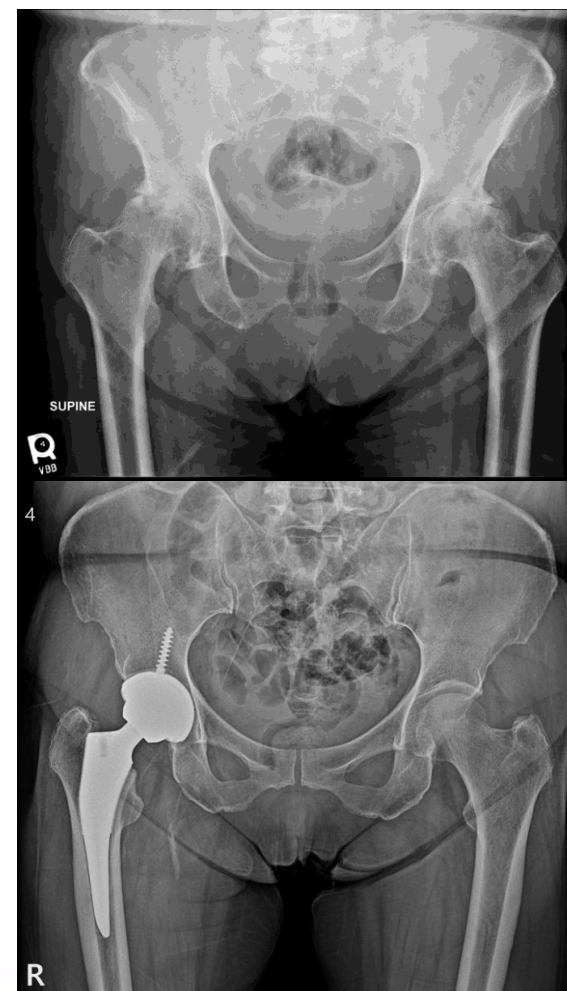
## Knee Joint (슬관절)





## Arthroplasty (인공관절 치환술)

- Osteoarthritis (골관절염)
- Osteonecrosis (골괴사)
- Hip fracture (고관절 골절)
- Rheumatoid arthritis (류마티스 관절염)
- Hip dysplasia (고관절 이형성증)





# 인공관절 수술건수 추이

## » 연도별 주요수술 건수 추이

(단위: 건, %)

구 분		2017	2018	2019	2020	2021	연평균 증감률 (2017~)
순위	계(33개 주요수술)	1,840,989	1,870,385	1,996,261	1,953,665	2,097,494	3.3
1	백내장 수술	549,471	592,191	689,919	702,621	781,220	9.2
2	일반 척추수술	172,429	176,522	183,908	188,394	201,197	3.9
3	치핵 수술	199,194	179,073	170,850	169,669	160,441	-5.3
4	제왕절개수술	161,667	155,227	153,055	146,427	148,050	-2.2
5	담낭절제술	73,287	78,489	84,500	86,274	92,409	6
6	충수절제술	90,536	82,545	81,565	78,579	81,205	-2.7
7	슬관절 치환술	69,770	71,769	79,342	72,382	77,614	2.7
8	내시경 및 경피적 담도수술	45,949	51,146	54,498	58,091	76,967	13.8
9	스텐트삽입술	64,102	66,421	68,845	67,076	73,798	3.6
10	유방 부분 절제술	26,158	34,493	37,254	36,737	41,881	12.5
11	자궁절제술	43,725	42,526	41,895	39,686	41,237	-1.5
12	간색전술	37,712	37,671	38,802	37,987	38,615	0.6
13	갑상선 수술	28,699	30,828	33,754	31,931	37,150	6.7
14	내시경하 부비동 수술	60,832	65,767	64,066	33,311	34,253	-13.4
15	서혜 및 대퇴 허니아 수술	39,106	36,575	35,017	31,743	33,715	-3.6
16	고관절 치환술	28,690	29,317	30,436	31,301	33,282	3.8

- ✓ 슬관절 치환술
  - ✓ 약 78,000건 (2021)
  - ✓ 매년 2.7% 증가
- ✓ 고관절 치환술
  - ✓ 약 33,000건 (2021)
  - ✓ 매년 3.8% 증가



# 인공관절 수술건수 추이

» 연도별 인구 10만 명당 주요수술건수 추이

(단위: 건, %)

구 분		2017	2018	2019	2020	2021	연평균 증감률 (2017~)
순위	계(33개 주요수술)	3,511.55	3,558.80	3,775.06	3,695.16	3,962.87	3.1
1	백내장 수술	1,048.08	1,126.77	1,304.68	1,328.94	1,475.99	8.9
2	일반 척추수술	328.9	335.87	347.78	356.33	380.13	3.7
3	치핵 수술	379.95	340.72	323.09	320.91	303.13	-5.5
4	제왕절개수술	617.36	591.1	579.71	554.32	279.72	-18
5	담낭절제술	139.79	149.34	159.79	163.18	174.59	5.7
6	충수절제술	172.69	157.06	154.24	148.62	153.42	-2.9
7	슬관절 치환술	133.08	136.56	150.04	136.9	146.64	2.5
8	내시경 및 경피적 담도수술	87.64	97.32	103.06	109.87	145.42	13.5
9	스텐트삽입술	122.27	126.38	130.19	126.87	139.43	3.3
10	유방 부분 절제술	49.89	65.63	70.45	69.48	79.13	12.2
11	자궁절제술	166.97	161.94	158.68	150.24	77.91	-17.4
12	간색전술	71.93	71.68	73.38	71.85	72.96	0.4
13	갑상선 수술	54.74	58.66	63.83	60.39	70.19	6.4
14	내시경하 부비동 수술	116.03	125.14	121.15	63	64.72	-13.6
15	서혜 및 대퇴 허니아 수술	74.59	69.59	66.22	60.04	63.7	-3.9
16	고관절 치환술	54.72	55.78	57.56	59.2	62.88	3.5

✓ 슬관절 치환술

✓ 약 147건 / 10만명 (2021)

✓ 매년 2.5% 증가

✓ 고관절 치환술

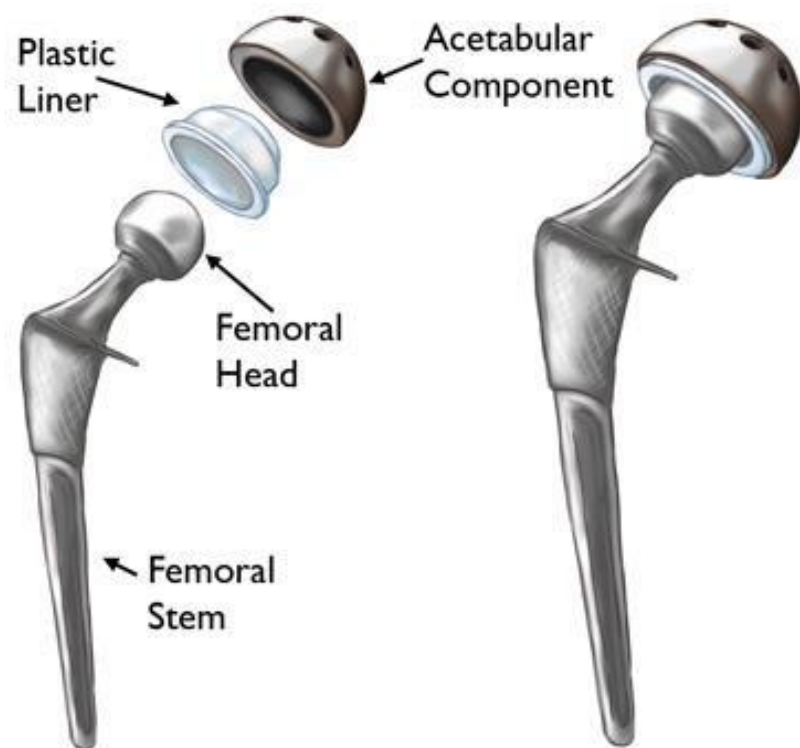
✓ 약 63건 / 10만명 (2021)

✓ 매년 3.5% 증가

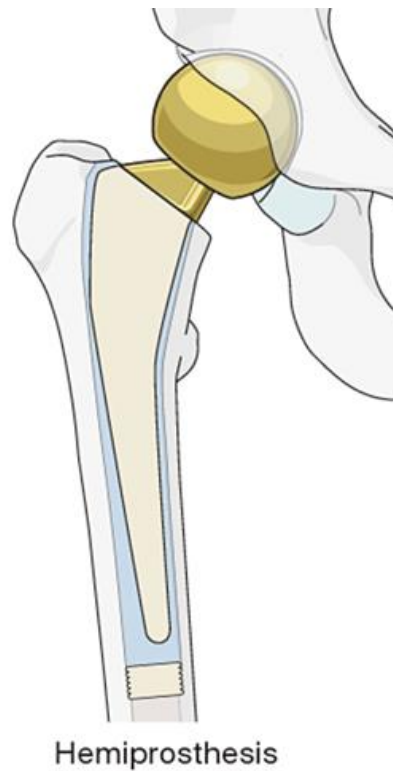




# Total hip arthroplasty 고관절 전치환술

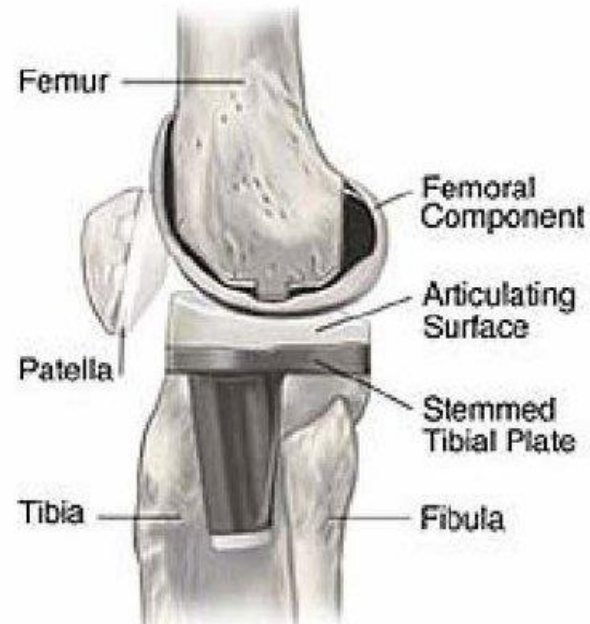
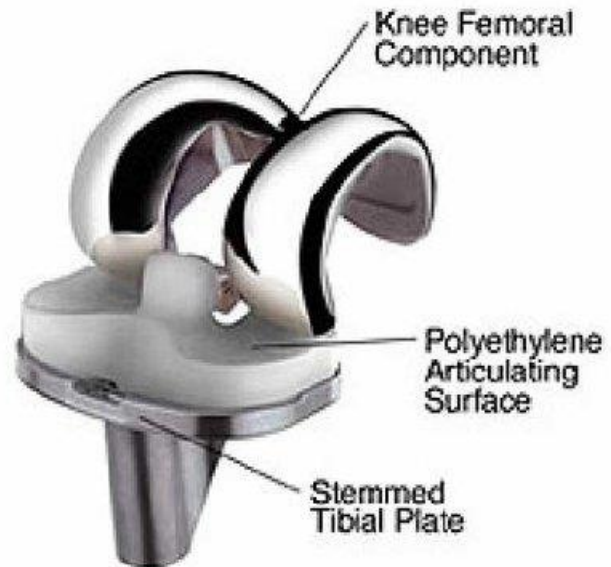


# Bipolar hemiarthroplasty 고관절 (양극성) 반치환술

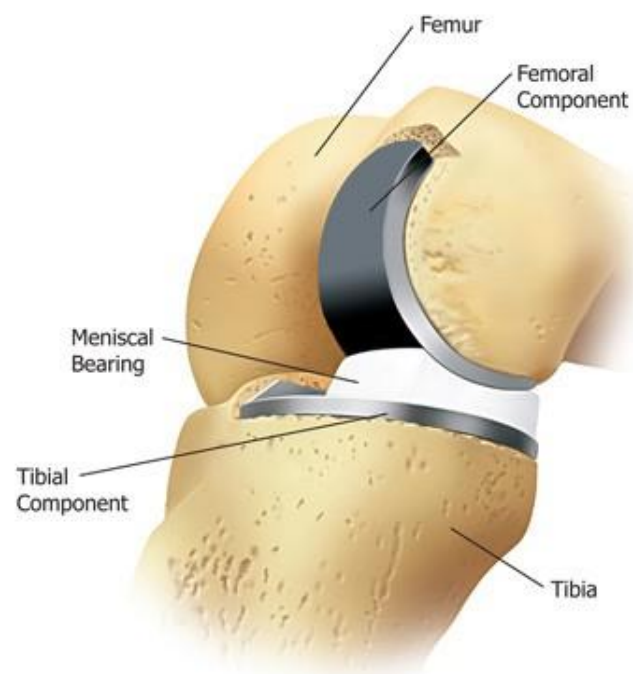




# Total knee arthroplasty 슬관절 전치환술



# Unilateral knee arthroplasty 슬관절 반치환술





## 인공관절의 다양한 소재



Metal on Polyethylene



Metal on Metal



Ceramic on Ceramic

- ✓ 티타늄 합금
- ✓ 코발트 크롬
- ✓ 세라믹
- ✓ 폴리에틸렌
- ✓ 지르코늄

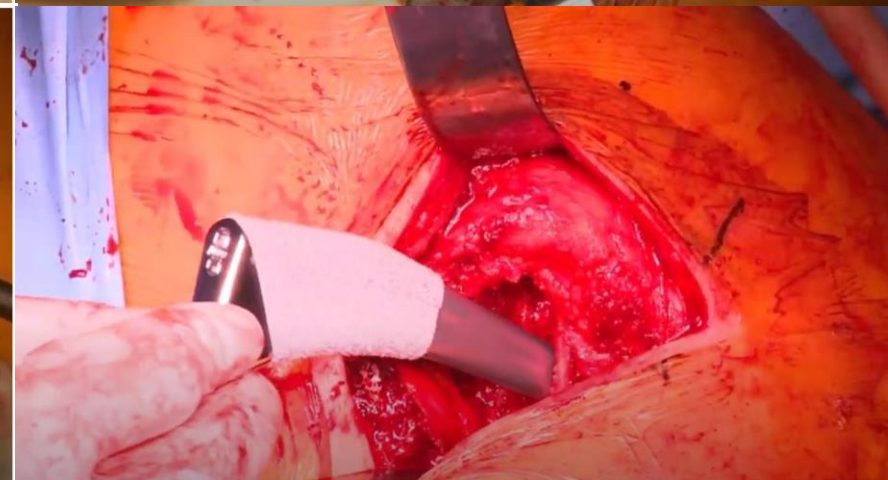
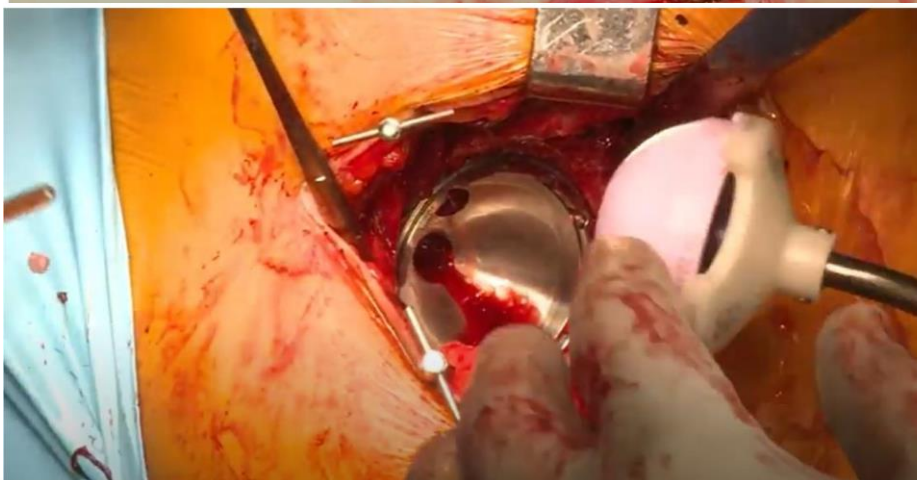
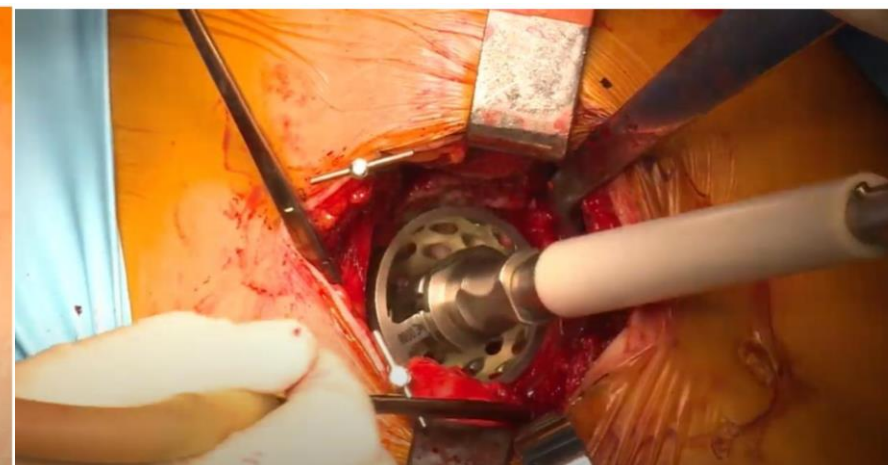
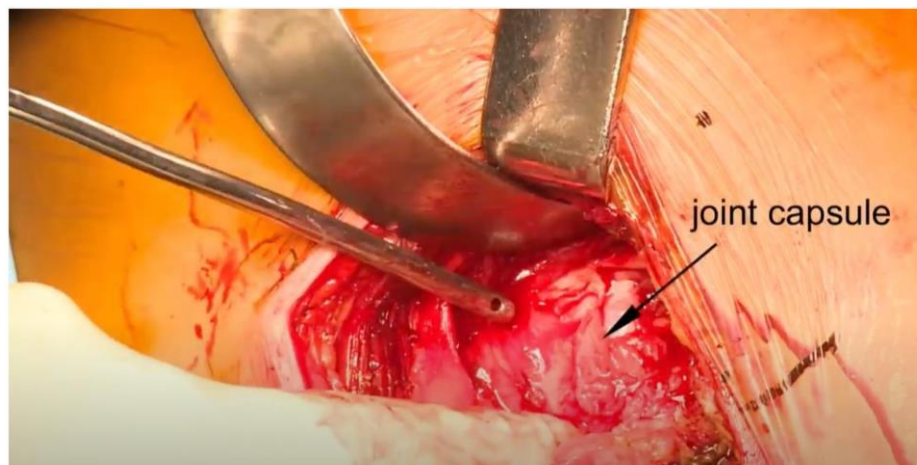


## Instruments during arthroplasty

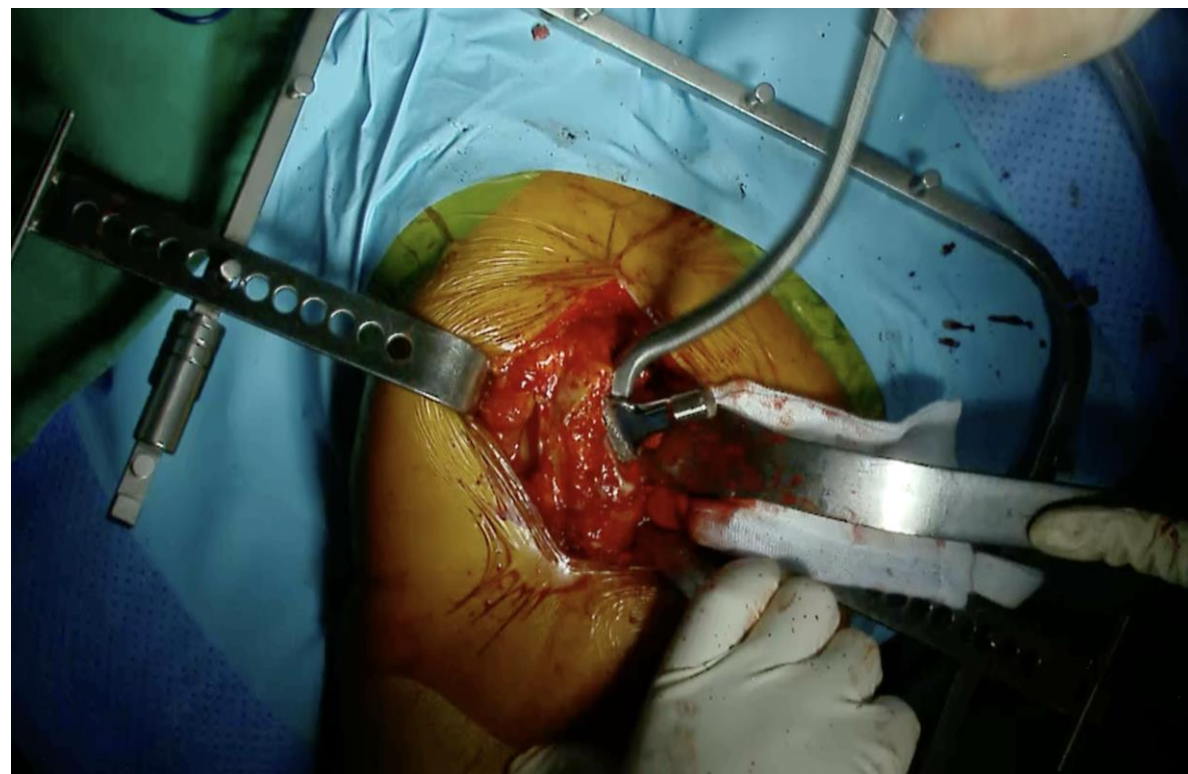
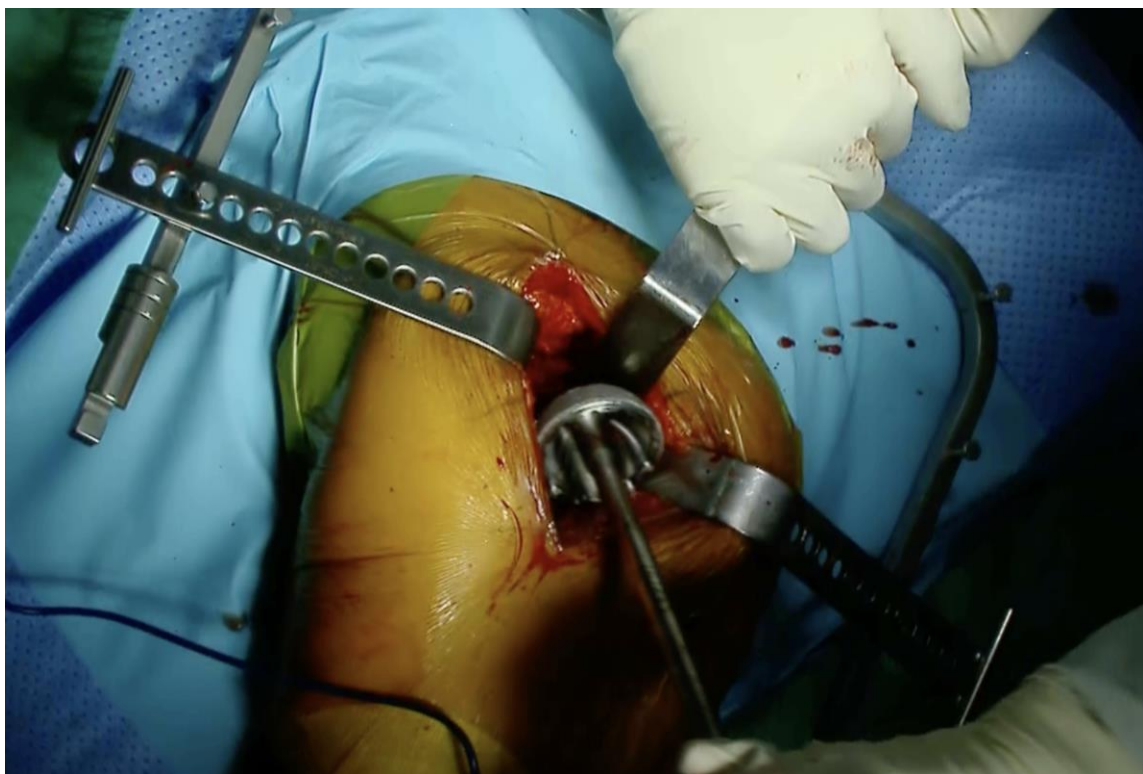




# Total hip arthroplasty 고관절 전치환술

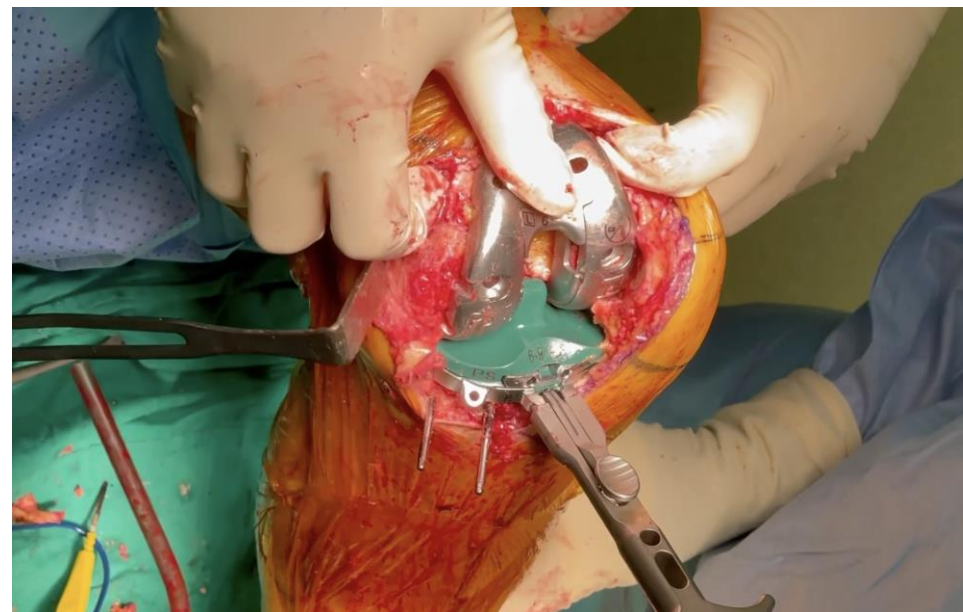
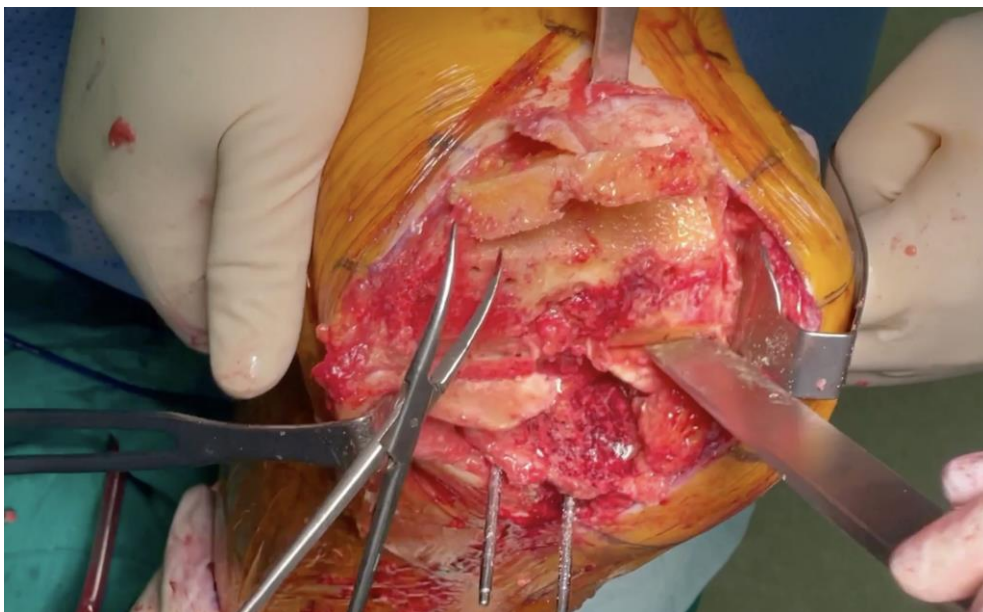


## Total hip arthroplasty 고관절 전치환술





# Total knee arthroplasty 슬관절 전치환술





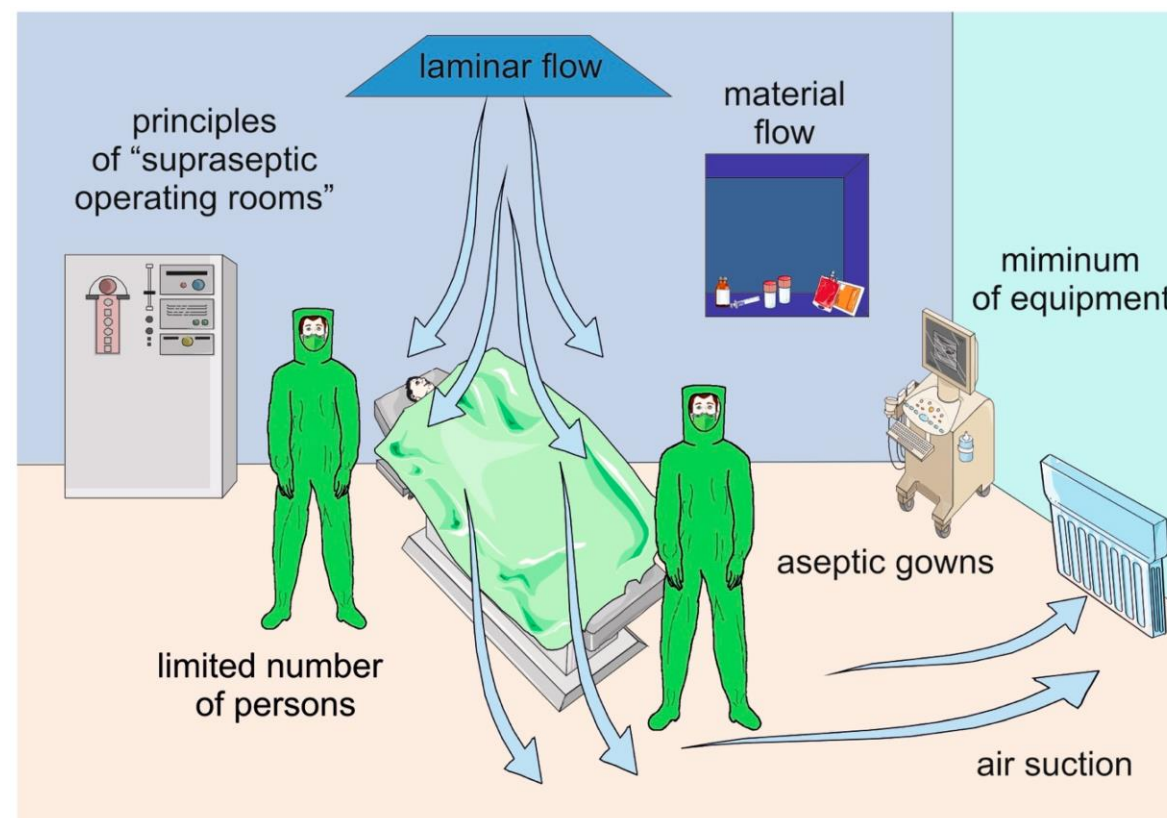
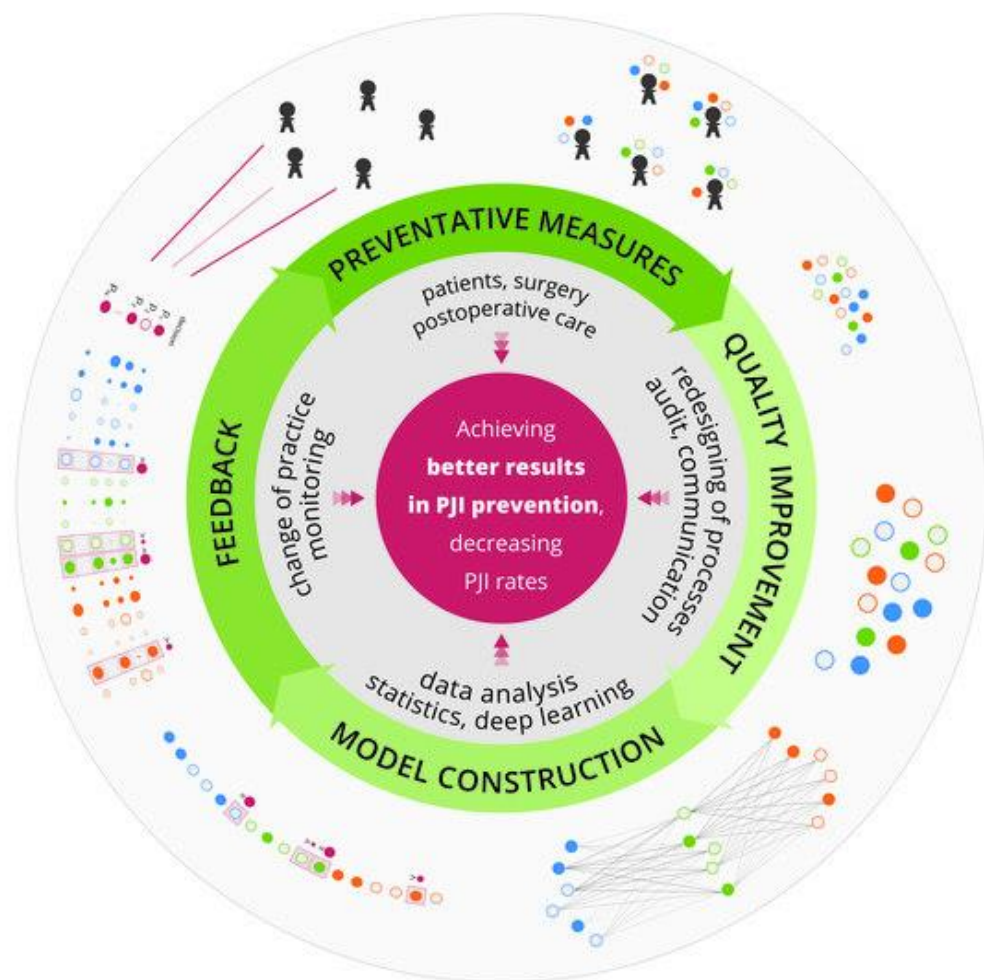
## Periprosthetic joint infection 치환물 주변 감염



- ✓ 당뇨병
- ✓ 류마티스관절염
- ✓ 부신피질호르몬
- ✓ 흡연
- ✓ 과체중, 비만
- ✓ 빈혈
- ✓ 수술 병력



## Conclusion



Gallo, J. et al. J. Clin. Med. 2020







*Thank you for your attention.*

*Yongin Severance*

With the Love of God,  
Free Humankind from Disease and Suffering

