Article:
Martell-Pelletier, J, Barr, AJ, Cicuttini, FM et al. (2016) Osteoarthritis. Nature Reviews Disease Primers, 2. 16072. ISSN: 2056-676X

https://doi.org/10.1038/nrdp.2016.72

Figure 1

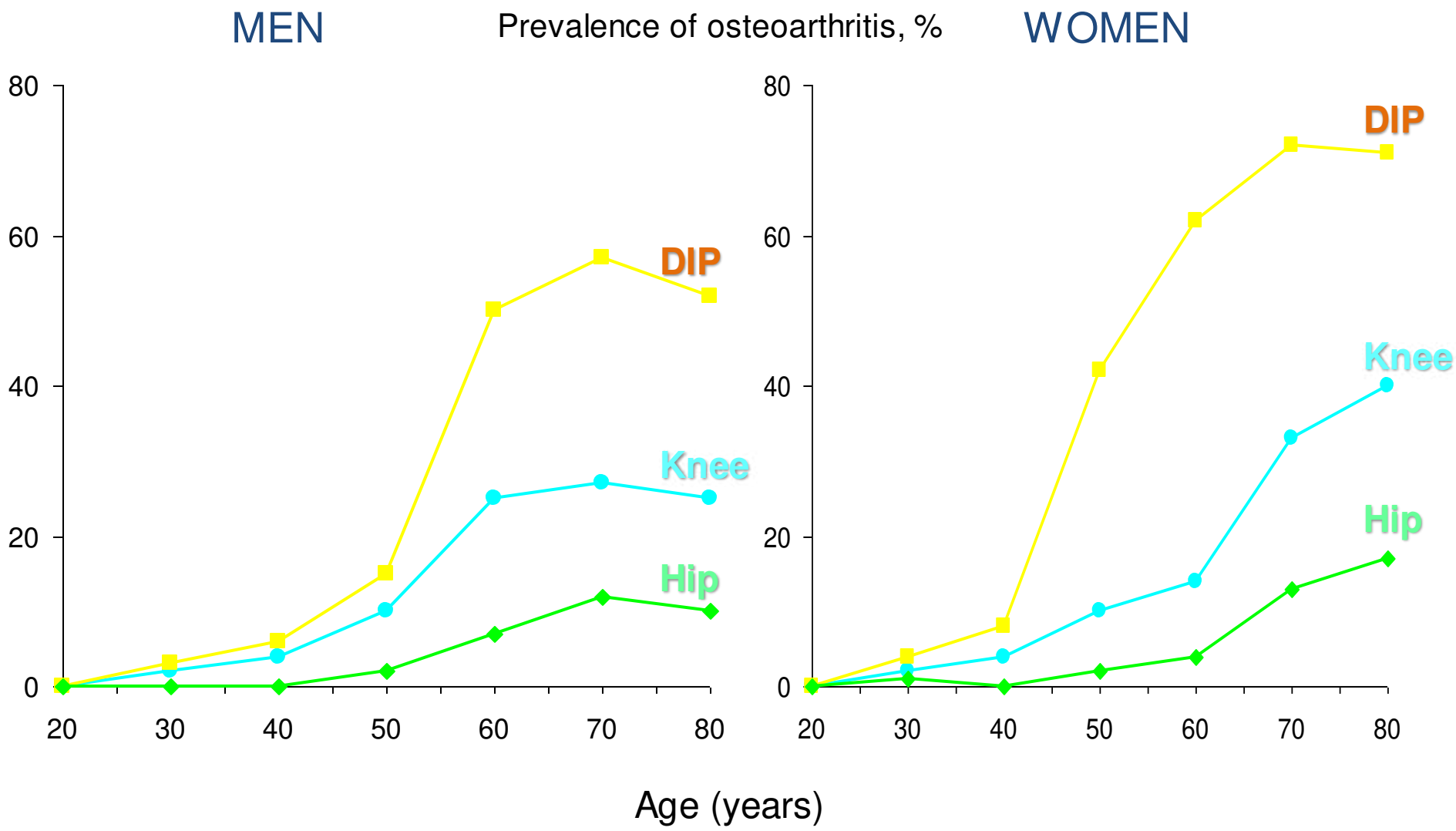

MEN
Prevalence of osteoarthritis, %
WOMEN
80
60
40
20
0
DIP
Knee
Hip
20
30
40
50
60
70
80
Age (years)

Figure 2

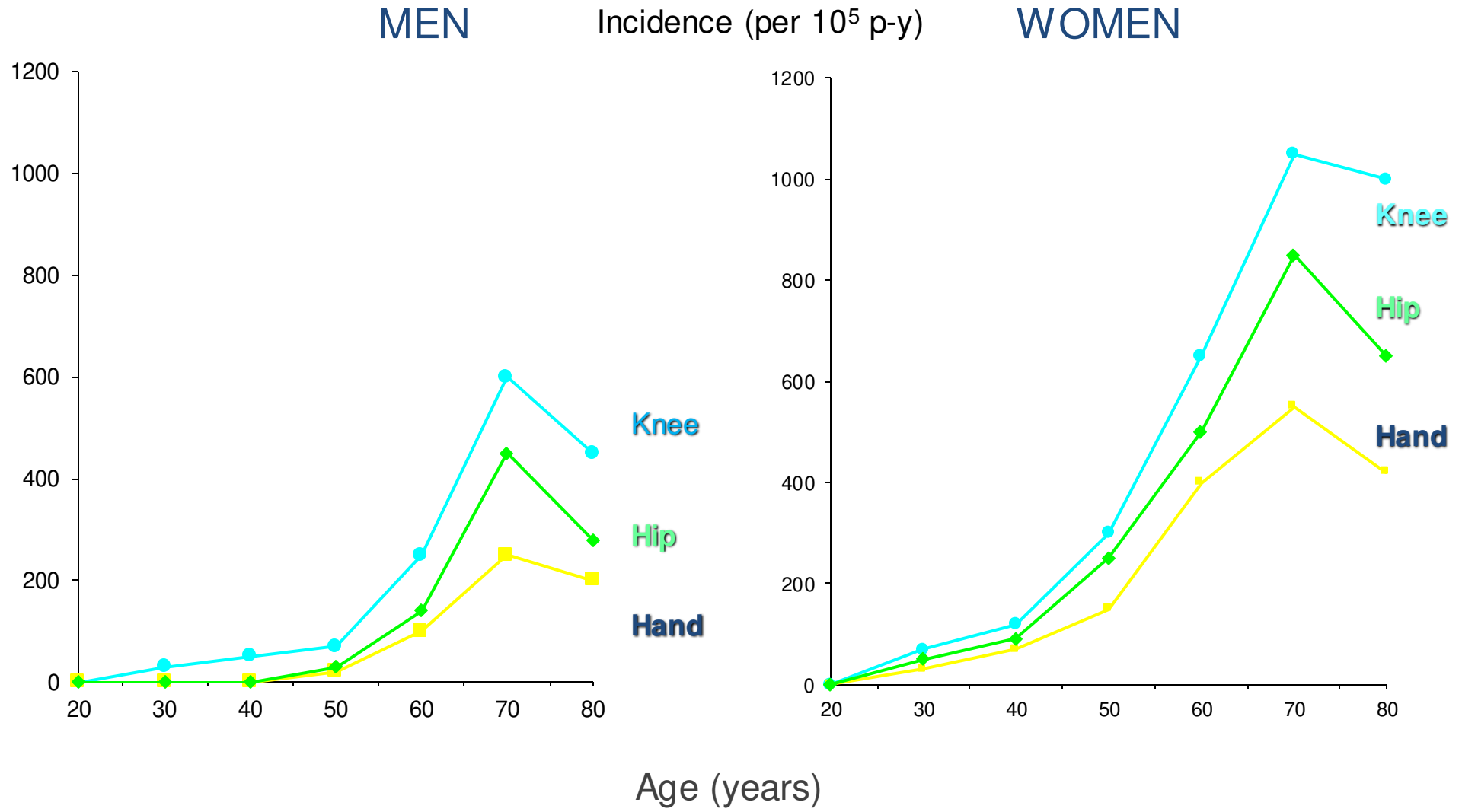
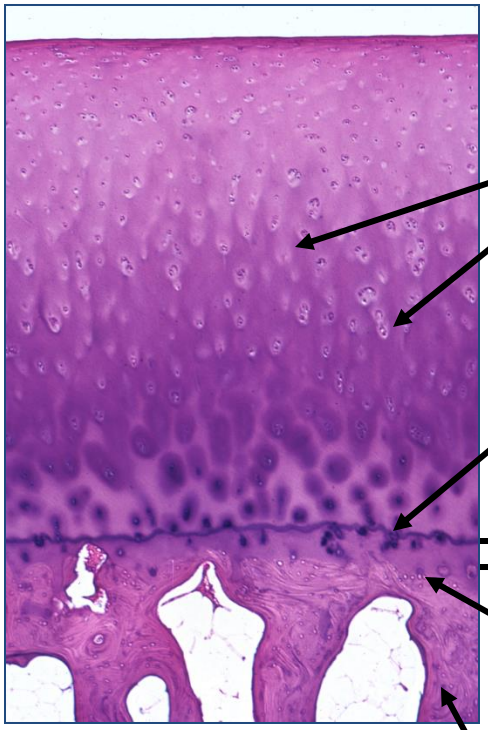

MEN
Incidence (per 10^5 p-y)
WOMEN
1200
1000
800
600
400
200
0
20
30
40
50
60
70
80
Knee
Hip
Hand
Age (years)

Figure 3

Normal articular cartilage



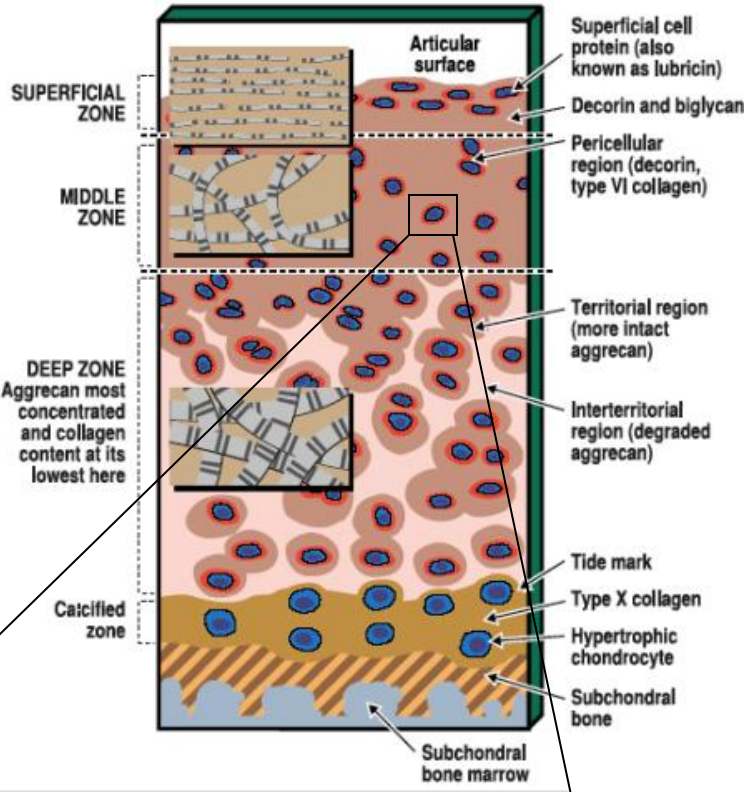
Chondrocytes

Tidemark

Calcified cartilage

Subchondral cortical bone

Subchondral trabecular bone



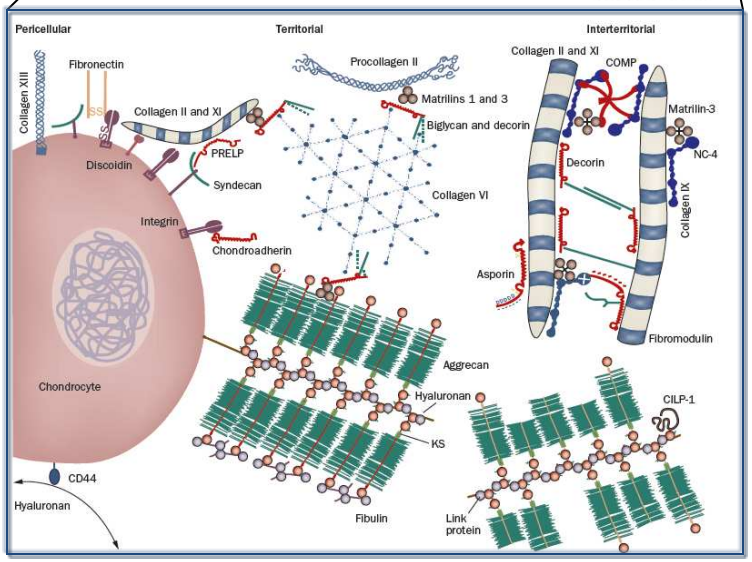


Figure 4

Osteoarthritis

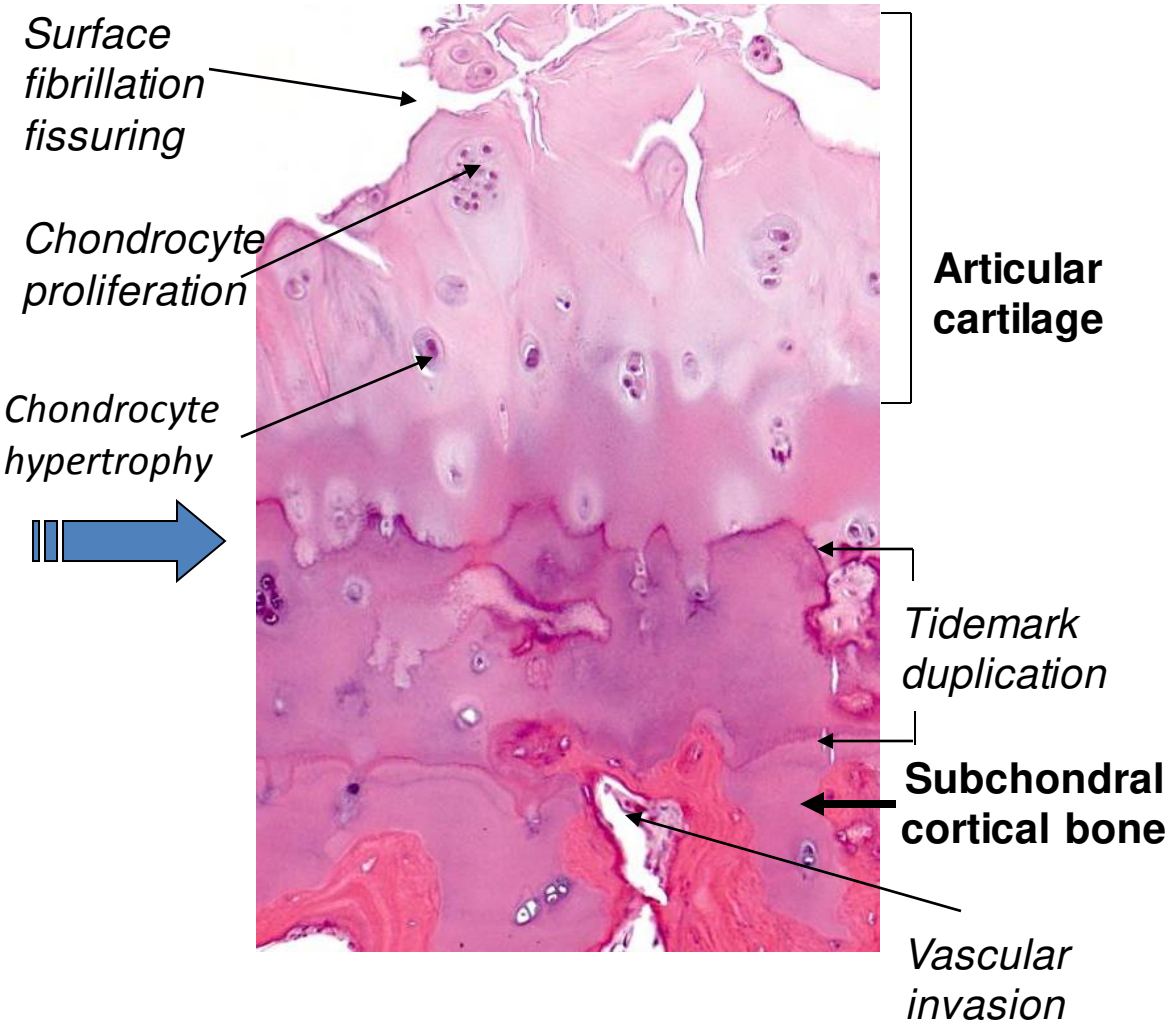


Figure 5A

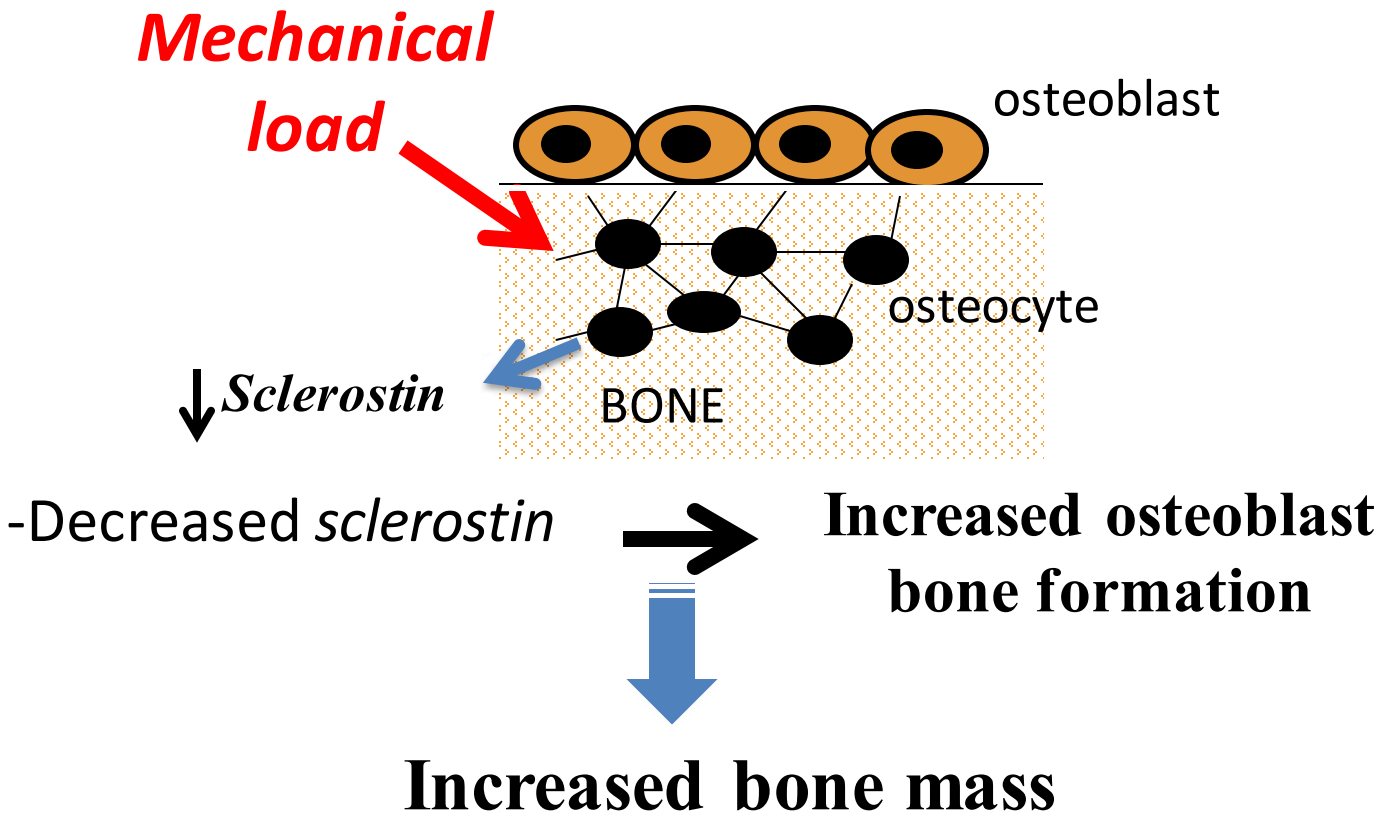

Mechanical load
osteoblast
osteocyte
BONE
Sclerostin
-Decreased sclerostin
Increased osteoblast bone formation
Increased bone mass

Figure 5B

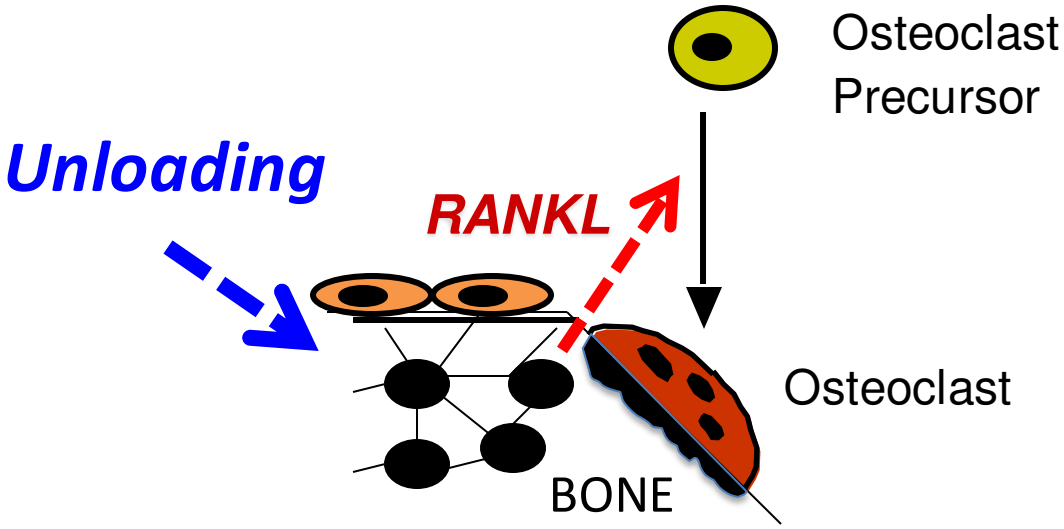
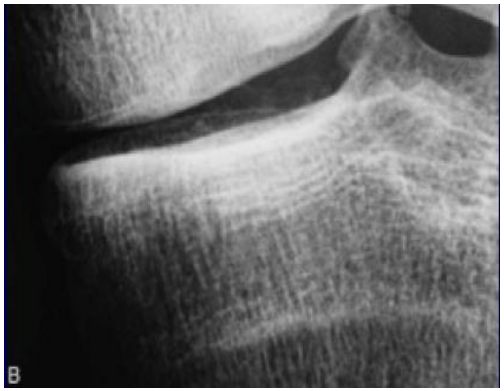


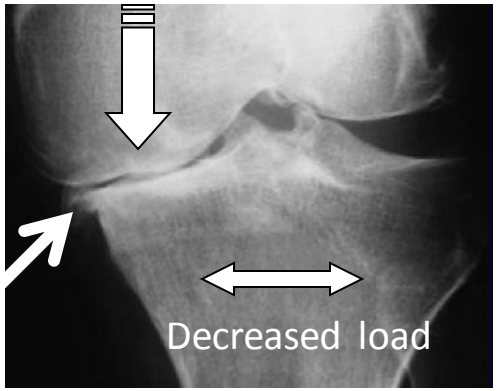
Figure 6

Peri-articular bone changes in OA: cellular mechanisms of adaptation



Osteophyte

increased mechanical load



- **Increased cortical plate thickness**
- **Flattening and deformation of articular contour**
- **Decreased subchondral trabecular bone mass**
- **Osteophyte formation**

- **Modeling and remodeling**
- **Remodeling**
- **Remodeling**
- **Endochondral bone formation**

Figure 7

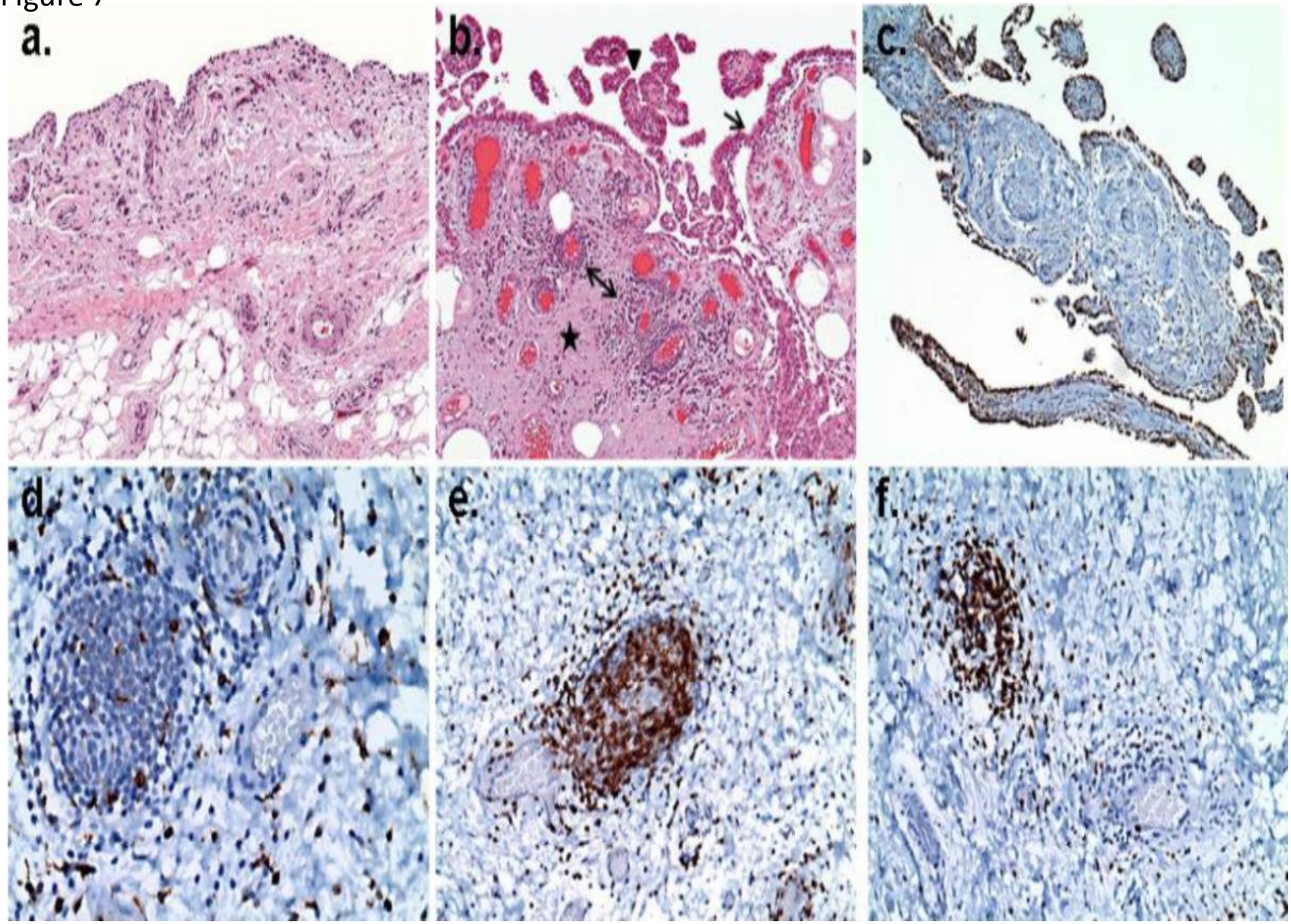
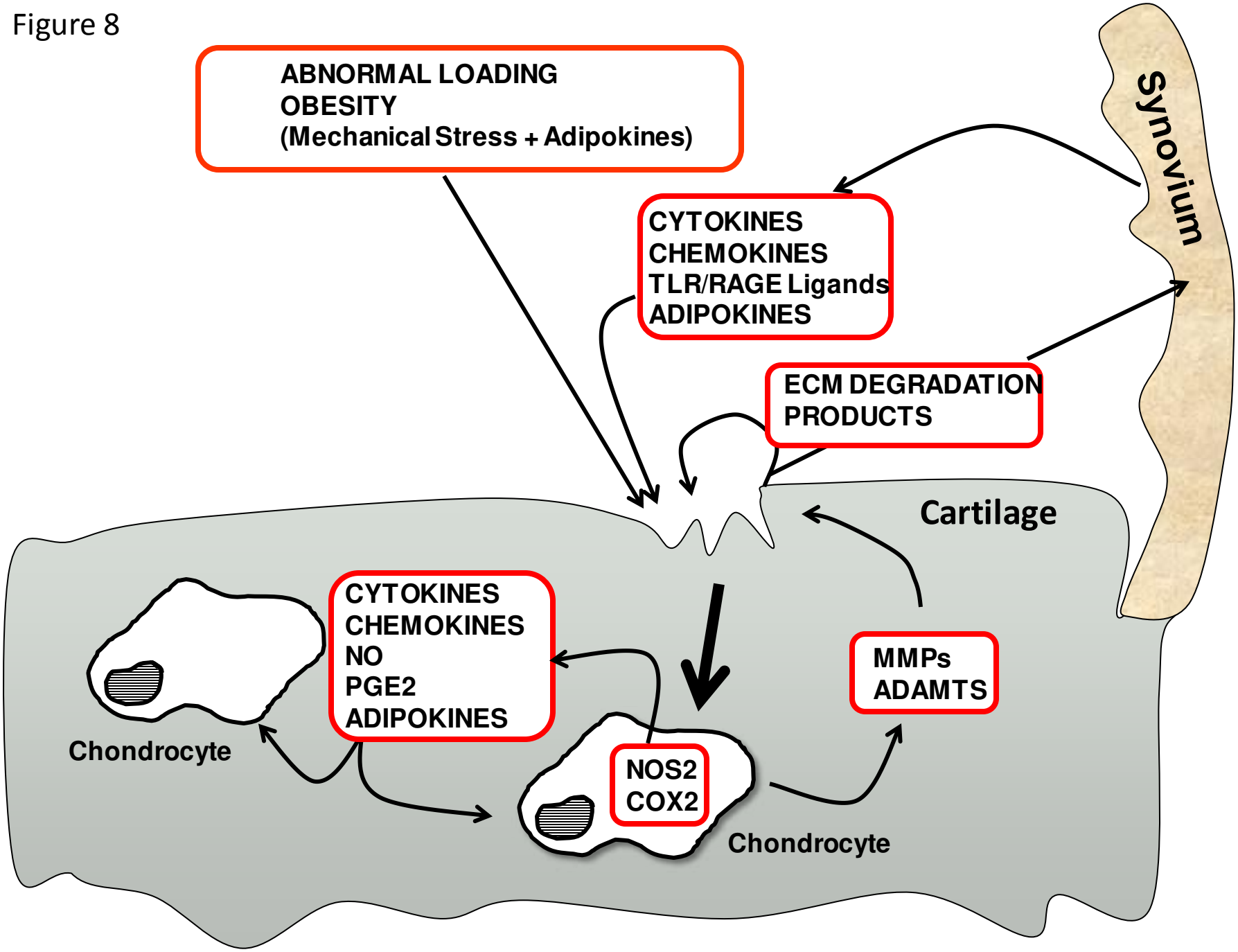


Figure 8


ABNORMAL LOADING
OBESITY
(Mechanical Stress + Adipokines)
Synovium
CYTOKINES
CHEMOKINES
TLR/RAGE Ligands
ADIPOKINES
ECM DEGRADATION
PRODUCTS
Cartilage
CYTOKINES
CHEMOKINES
NO
PGE2
ADIPOKINES
MMPs
ADAMTS
Chondrocyte
NOS2
COX2
Chondrocyte