

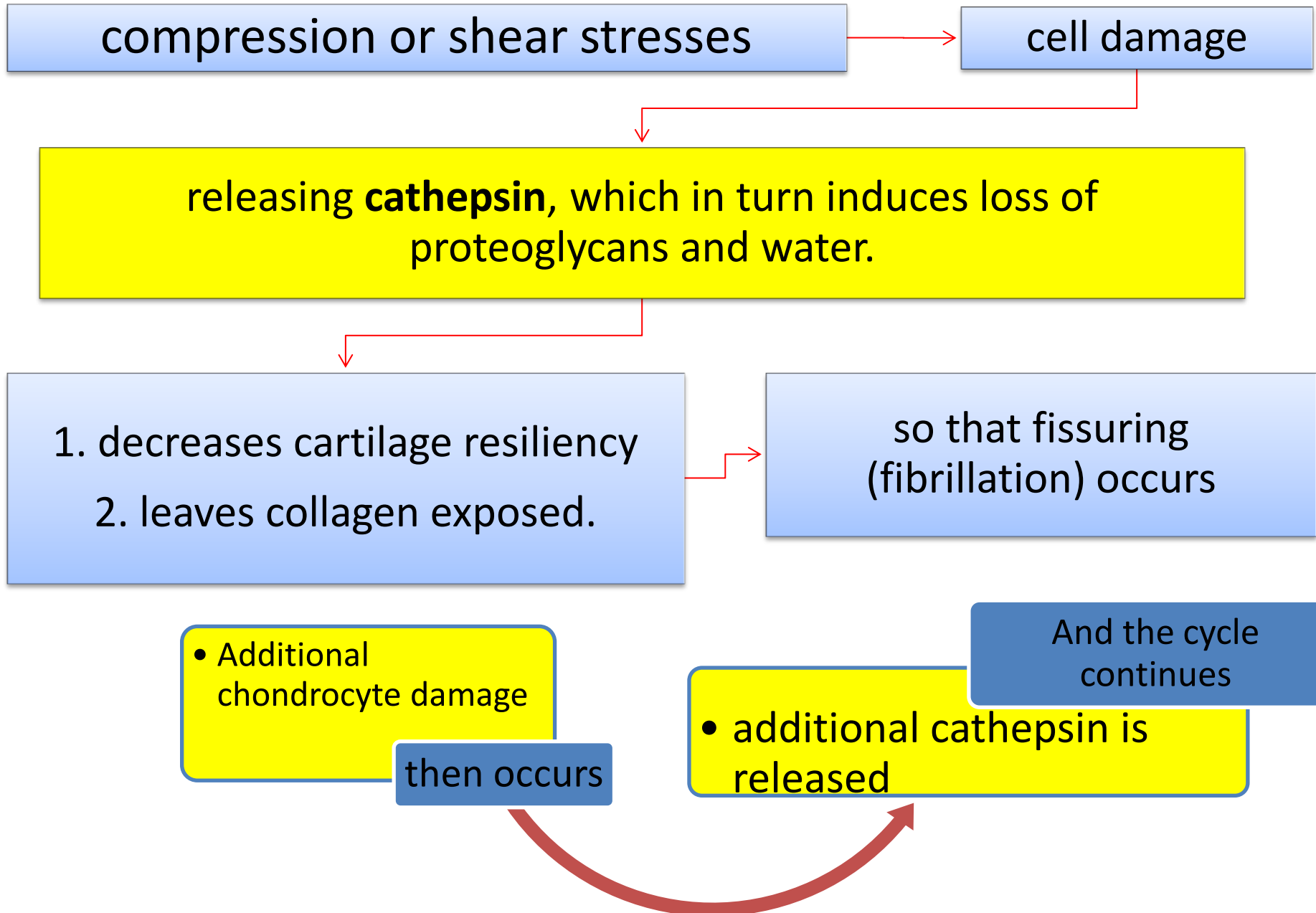
Degenerative Joint Disease include:

Dr. Rafid Majeed Naeem

Primary DJD is a degeneration of cartilage in .١
elderly individuals occurring for **no known**
reason

Secondary DJD develops secondarily from .٢
known conditions that affect the joint and
supporting structures. This is perhaps the
most common type observed in **small**
animals.

Degeneration of the Articular Cartilage



With

degradative enzymes, .١

lack of orientation in regenerating tissue, and .٢

abnormal stress caused by these unstable joints, .٣



physiological repair attempts are usually negligible.

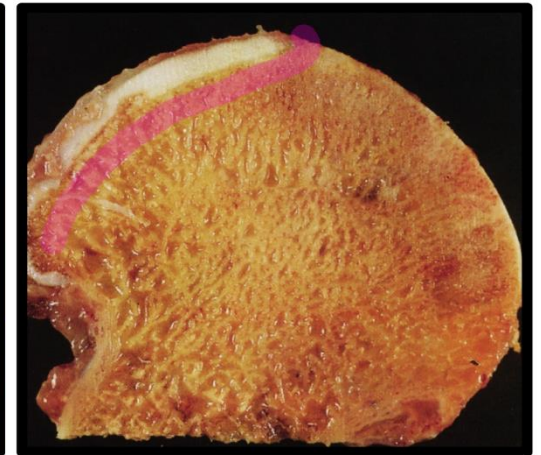
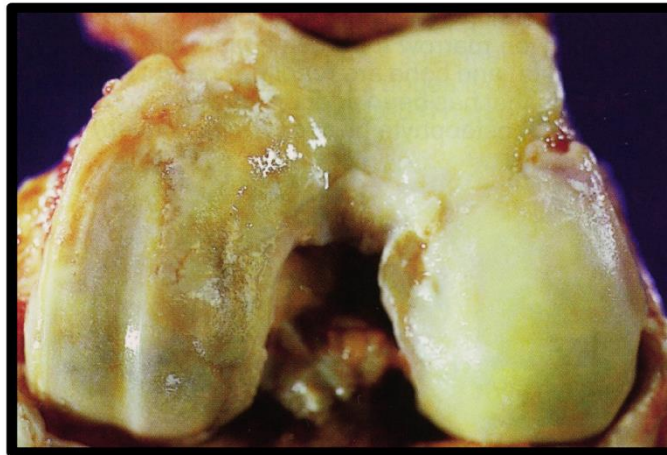
- Two changes in bone occur in the presence of osteoarthritis:
 1. the production of marginal osteophytes
 2. the appearance of subchondral sclerosis

Osteophytes sometimes form in an area not covered by synovium. Bone spurs that form outside joints where tendons insert are termed *enthesiophytes*.

Changes in Synovial Membrane

The synovial membrane in DJD generally appears normal. The surface may show some hyperplasia, but minimal inflammatory response.

Changes in Cartilage



Early gross changes in articular cartilage consist of a localized, **soft or velvety area** that changes to a **yellow to dull-white color with pits**, and with depressions and linear **grooves** becoming apparent. . In advanced disease the **cartilage** may be **soft and spongy**. In areas where subchondral bone is exposed and subjected to wear, a highly **polished eburnated surface** may be present. In joints with apposing articular surfaces, “kissing” or **mirror-image lesions** develop

Clinical Signs

Pain. . ١

Stiffness. . ٢

Crepitation. . ٣

Obesity. . ٤

Age . ٥

Treatment

Objectives

Objectives of treatment for osteoarthritis in animals are

- (1) to relieve pain,
- (2) to maintain function and range of motion (unless undertaking arthrodesis), and
- (3) to maintain or regain normal activity.

1. Rest: includes short walks on leash and elimination of running and jumping. When the animal is overusing a joint affected by early osteoarthritis, or in cases of early traumatic arthroses, **coaptation splints, casts, or slings** for 2 to 3 weeks may be useful

2. **Heat:** to relieve muscle spasm and pain.

soaking a facecloth or towel in fairly warm water and applying it around the joint for 10 minutes, two or three times per day. •

Therapeutic ultrasound: applying heat in animals, 5 to 10 watts (total dose) twice daily for 5 to 10 days. •

In **acute** joint injuries, **cold** rather than heat is indicated to decrease pain, swelling, and hematoma formation. •

3. **Exercise:**

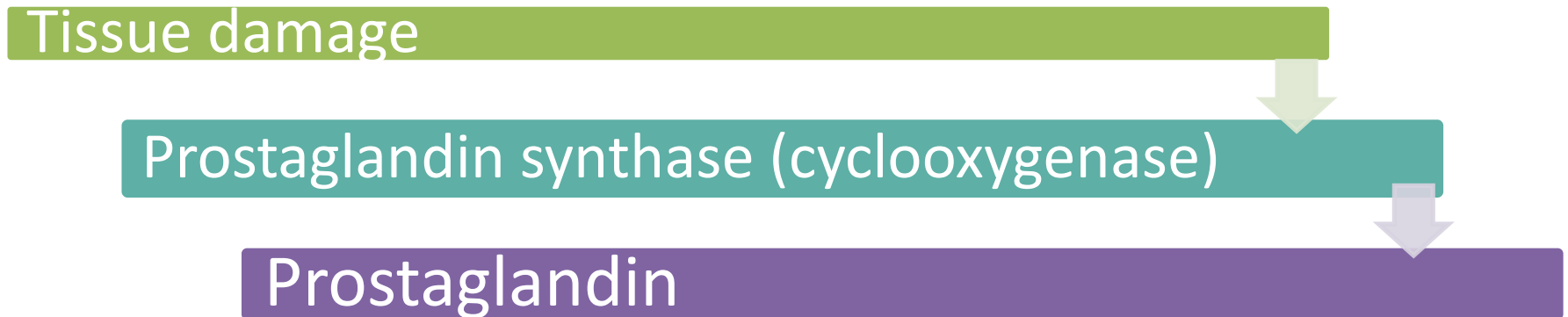
Swimming is an excellent exercise for osteoarthritis of joints because non-weight-bearing ROM (range of motion) exercise decreases joint capsule adhesions. •

4. **Medications**

4. Medications

Most medications **do nothing** to reverse osteoarthritis, for the most part to **decrease pain and discomfort**. any **pain-reducing drugs** should be accompanied by **rest**.

Nonsteroidal anti inflammatory drugs (NSAIDs) are anti inflammatory, analgesic, and antipyretic. The inflammatory cascade has been simplified, as follows:



The NSAIDs block the cascade from cyclooxygenase (COX) to prostaglandin, thereby decreasing inflammation.

COX-1: performs **homeostatic mechanisms**, including manufacture of prostaglandins that protect the GI tract. COX-1 inhibitors can lead to GI erosions and ulceration.

COX-2 is not normally found in most tissues and helps **transmit pain and accelerates inflammation**.

the COX-2 inhibitors are *theoretically* a better choice of drug with fewer undesirable side effects.

Aspirin: in humans is reported to **inactivate COX permanently** (until new cells are formed), where as other NSAIDs are competitive **inhibitors** and **reversible**.

Aspirin in cats can be **quite toxic (platelet dysfunction)**, but administration every third day in low doses is a widely used prophylaxis treatment for thromboembolism.

5. **Diet:**

Weight reduction alone has been very effective •
for some animals in reducing pain from
osteoarthritis.

5. *Acupuncture:*

A prospective study failed to show any clinical improvement based on owner questionnaire or veterinary physical examination. Objective measurements using force plate and kinematic gait analysis showed no statistical differences between treatment and placebo groups.

Surgical Methods

Is used when pain or function is not helped by reasonable conservative measures. •

