

OSTEOARTHRITIS AND PAIN

Questions of Validity

Nikolai Bogduk

Emeritus Professor of Pain Medicine

University of Newcastle, Australia

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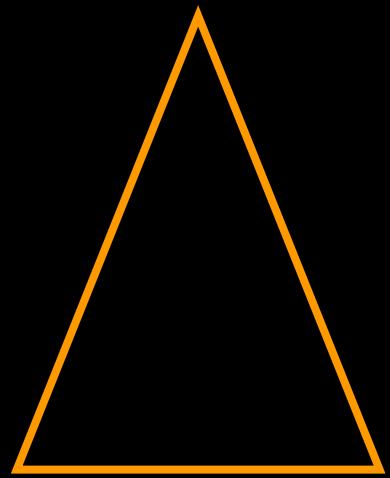
BACKGROUND

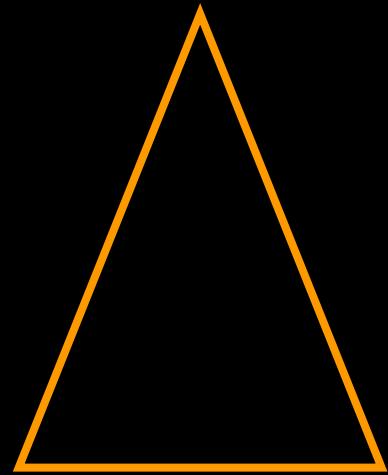
Medical Superintendent

Overloaded by referrals

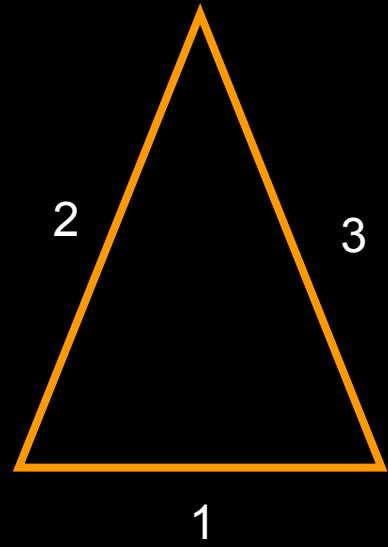
Clinical Pathways

PRECEPTS



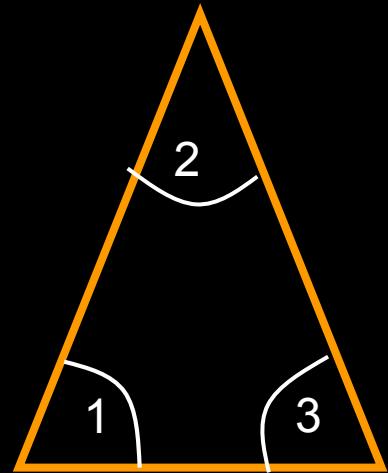


“triangle”



“triangle”

Three-side figure,



“triangle”

**Three-side figure,
enclosing thee angles**

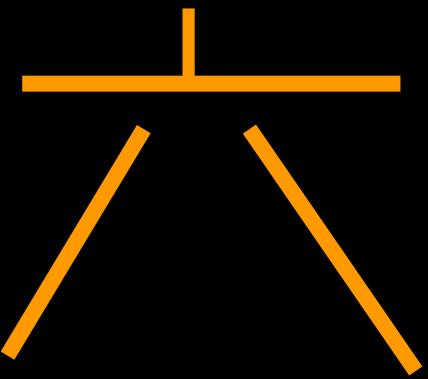
DIAGNOSIS

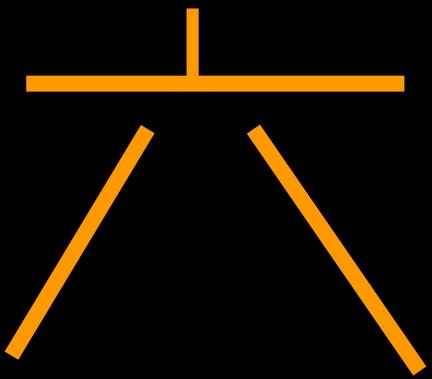
= a rubric

applied when

strict criteria

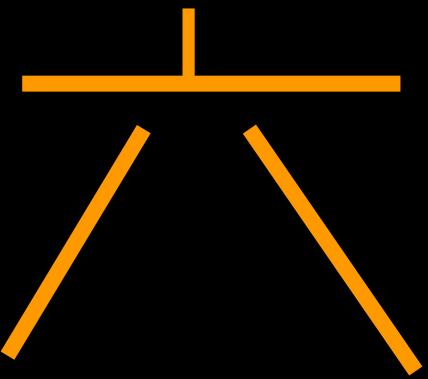
are satisfied

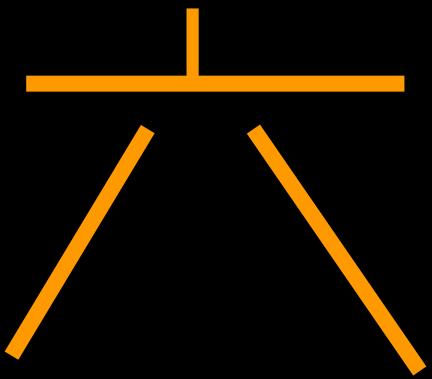




“hachi”

= 8





“hachi”

= 8

CONSENSUAL INTERCONGRUITY

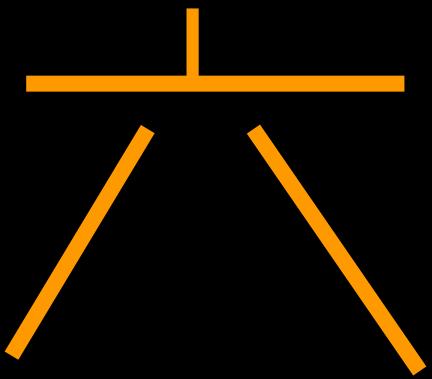
CONSENSUAL INTERCONGRUITY

together

sense

between

agree



“hachi”

= 8

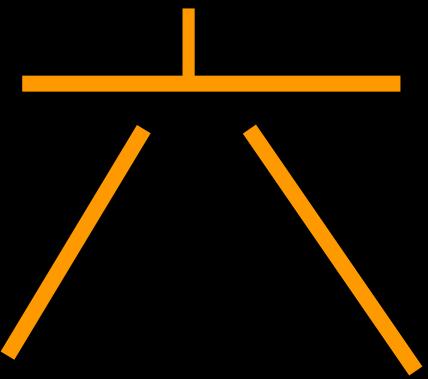
CONSENSUAL INTERCONGRUITY

“We all know what we mean”

CONSENSUAL INTERCONGRUITY

“We all know what we mean”

Doesn't meet it is correct



“roku”

= 6

OSTEOARTHRITIS

?

OSTEOARTHRITIS ?

DIAGNOSTIC CRITERIA

OSTEOARTHRITIS ?

DIAGNOSTIC CRITERIA

American College of Rheumatology

Altman R et al. Development of criteria for the classification and reporting of osteoarthritis. Classification of osteoarthritis of the knee. Diagnostic and Therapeutic Criteria Committee of the American Rheumatism Association. Arthritis Rheum 1986; 29:1039-1049.

Altman R et al. The American College of Rheumatology criteria for the classification and reporting of osteoarthritis of the hand. Arthritis Rheum 1990; 33:1601-1610.

Altman R et al. The American College of Rheumatology criteria for the classification and reporting of osteoarthritis of the hip. Arthritis Rheum 1991; 34:505-514.

OSTEOARTHRITIS

?

DIAGNOSTIC CRITERIA

HAND OA

pain

enlargement

swelling

deformity

OSTEOARTHRITIS ?

DIAGNOSTIC CRITERIA

HAND OA

HIP OA

pain

pain

ESR < 20

enlargement

swelling

deformity

X-ray

OSTEOARTHRITIS ?

DIAGNOSTIC CRITERIA

HAND OA

pain

enlargement

swelling

deformity

HIP OA

pain

ESR < 20

KNEE

age > 40

pain

stiffness

crepitus

X-ray

X-ray

OSTEOARTHRITIS ?

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HAND OA

pain

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HIP OA

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age > 40

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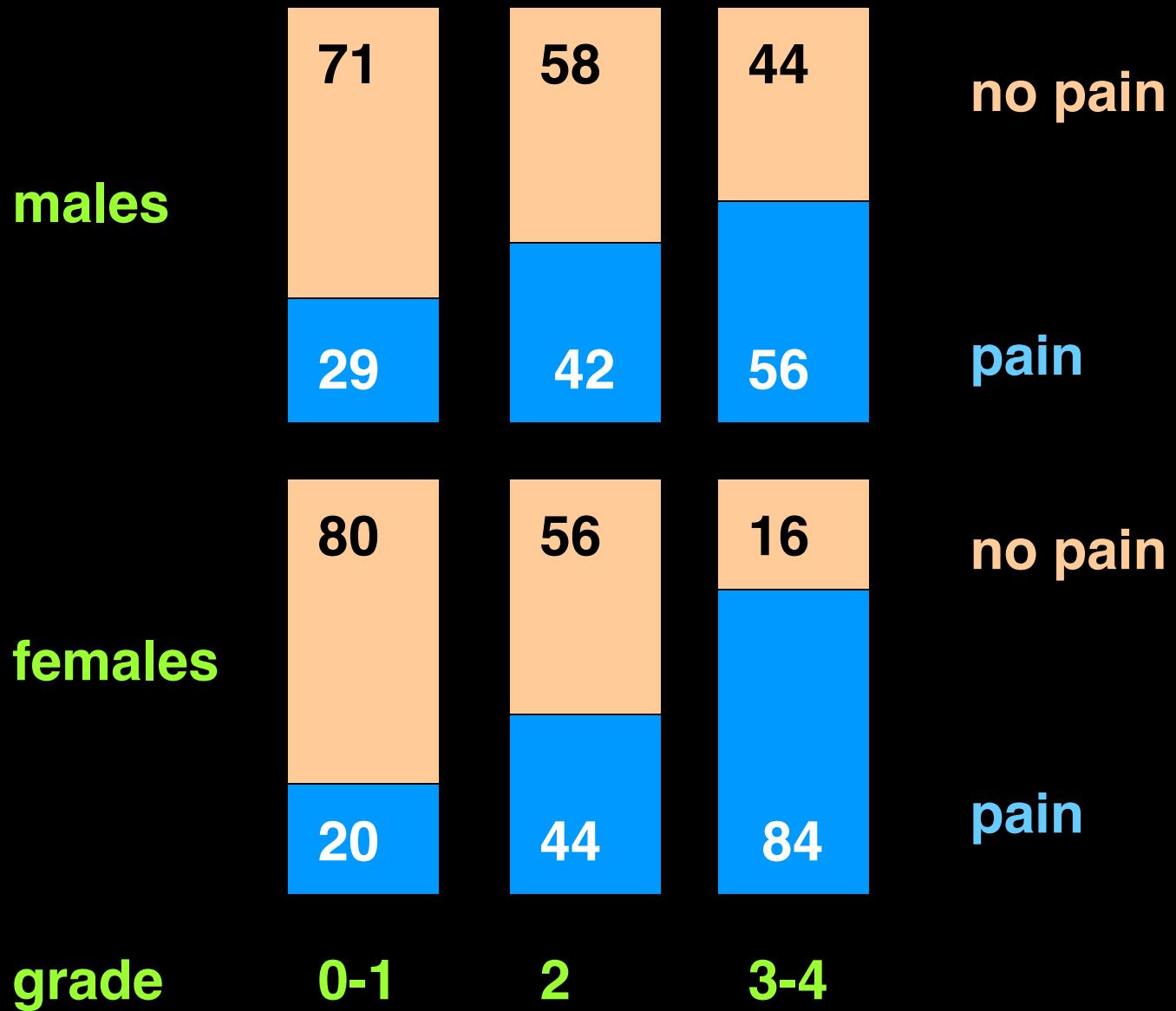
stiffness

crepitus

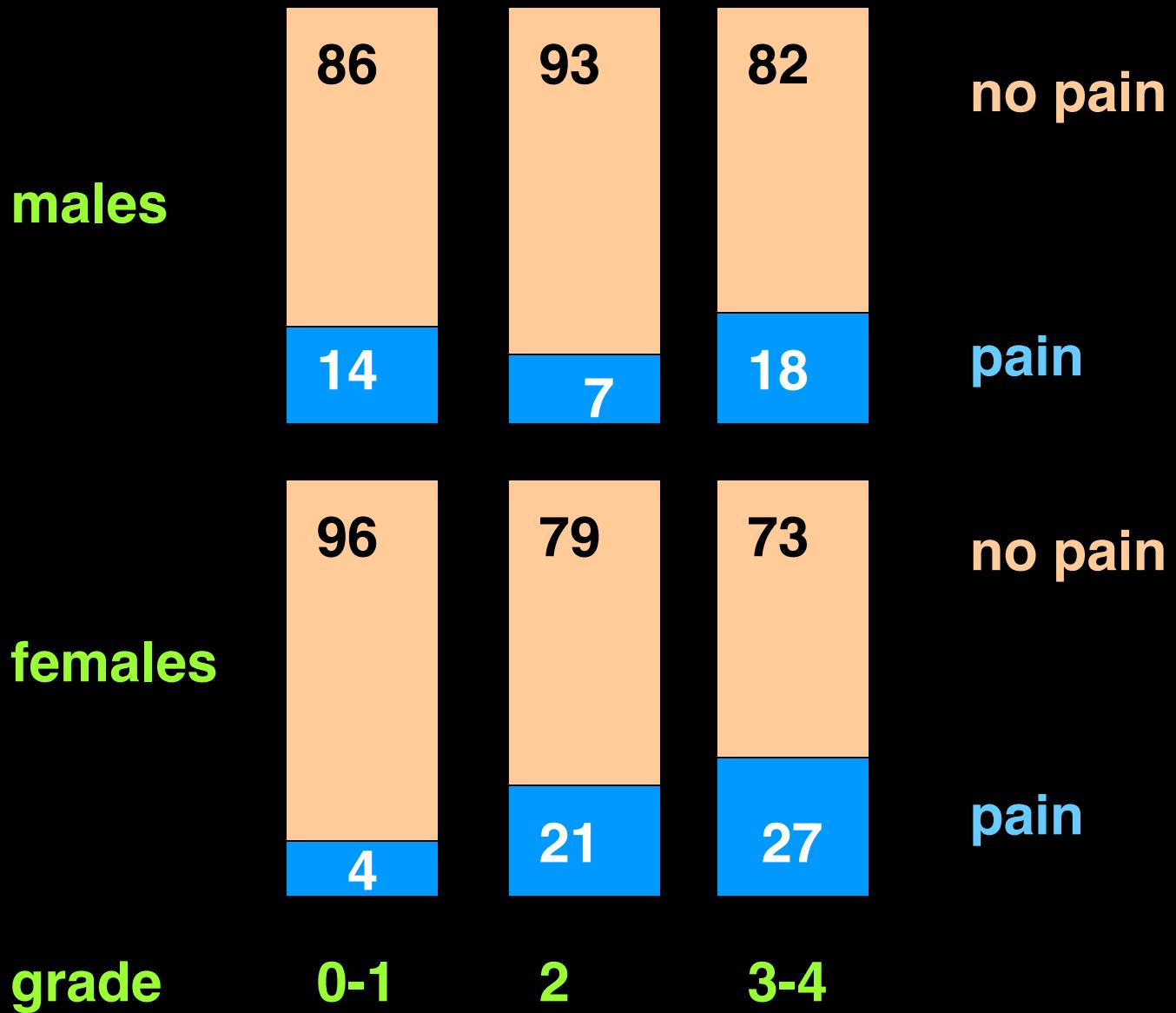
X-ray

X-ray

KNEE



HANDS



			0-1	2	3-4
CMC	males	PAIN	18	2	6
		NO PAIN	809	50	12
	females	PAIN	27	15	11
		NO PAIN	765	59	21
HIP	males	PAIN	8	0	9
		NO PAIN	129	11	7
	females	PAIN	16	0	6
		NO PAIN	151	5	0
HANDS	males	PAIN	119	7	11
		NO PAIN	715	96	49
	females	PAIN	29	23	30
		NO PAIN	651	86	80
KNEE	males	PAIN	108	25	10
		NO PAIN	364	35	8
	females	PAIN	88	39	31
		NO PAIN	350	50	6

			0-1	2	3-4
CMC	males	PAIN	18	2	6
		NO PAIN	809	50	12
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		NO PAIN	364	35	8
	females	PAIN	88	39	31
		NO PAIN	350	50	6

		Pain	No Pain		
HANDS	OA	148	71	sens	0.10
	NO OA	1366	311	spec	0.81
				+LR	1.1
KNEES		Pain	No Pain		
	OA	196	105	sens	0.22
	NO OA	714	99	spec	0.49
				+LR	0.43
HIPS		Pain	No Pain		
	OA	24	15	sens	0.08
	NO OA	280	33	spec	0.69
				+LR	0.26

		Pain	No Pain		
HANDS	OA	148	71	sens	0.10
	NO OA	1366	311	spec	0.81
KNEES	OA	196	105	+LR	1.1
	NO OA	714	99		
HIPS	OA	24	15	sens	0.08
	NO OA	280	33	spec	0.69
				+LR	0.26

		Pain	No Pain		
HANDS	OA	148	71	sens	0.10
	NO OA	1366	311	spec	0.81
KNEES	OA	196	105	+LR	1.1
	NO OA	714	99		
HIPS	OA	24	15	sens	0.22
	NO OA	280	33	spec	0.49
				+LR	0.43

		Pain	No Pain		
HANDS	OA	148	71	sens	0.10
	NO OA	1366	311	spec	0.81
KNEES	OA	196	105	+LR	1.1
	NO OA	714	99		
HIPS		Pain	No Pain		
	OA	24	15	sens	0.08
	NO OA	280	33	spec	0.69
				+LR	0.26

		Pain	No Pain		
HANDS	OA	282	331	sens	0.55
	NO OA	233	545		spec +LR
					1.4

		Pain	No Pain		
KNEES	OA	142	64	sens	0.32
	NO OA	307	874		spec +LR
					4.6

		Pain	No Pain		
HANDS	OA	282	331	sens	0.55
	NO OA	233	545		0.62
					1.4

		Pain	No Pain		
KNEES	OA	142	64	sens	0.32
	NO OA	307	874		0.93
					4.6

		Pain	No Pain		
HANDS	OA	282	331	sens	0.55
	NO OA	233	545		spec 0.62
KNEES	OA	142	64	sens	0.32
	NO OA	307	874		spec 0.93
				+LR	4.6

KNEE**PAIN****NO PAIN**

	0-1	2	3-4	0-1	2	3-4
35-44	27	3	1	126	5	0
45-54	43	6	2	135	8	0
55-64	16	7	3	58	15	4
65+	22	9	4	45	7	4

35-44	0.87	0.10	0.03	0.96	0.04	0.00
45-54	0.86	0.13	0.04	0.94	0.06	0.00
55-64	0.61	0.27	0.12	0.75	0.19	0.05
65+	0.63	0.26	0.11	0.80	0.13	0.09

OSTEOARTHRITIS ?

DIAGNOSTIC CRITERIA

HAND OA

HIP OA

KNEE

age > 40

pain

pain

pain

ESR < 20

enlargement

swelling

deformity

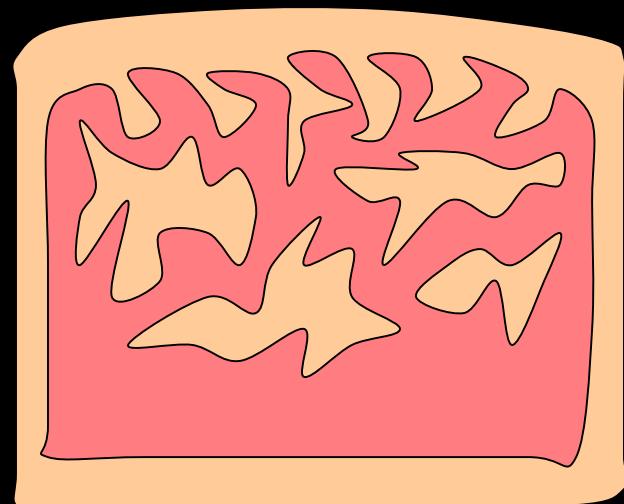
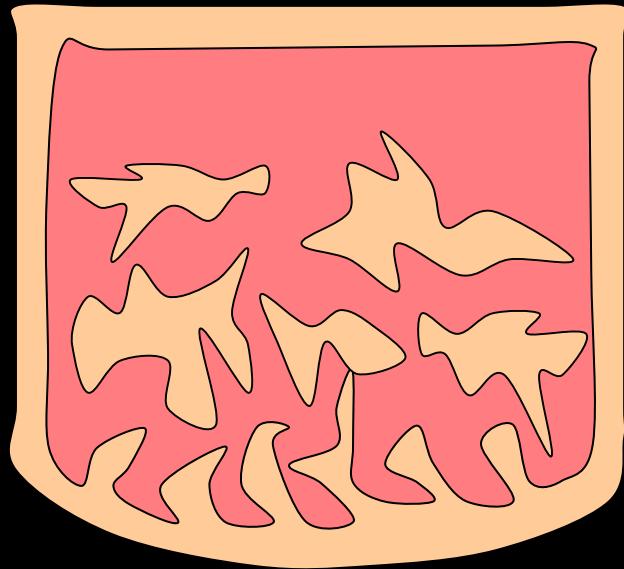
stiffness

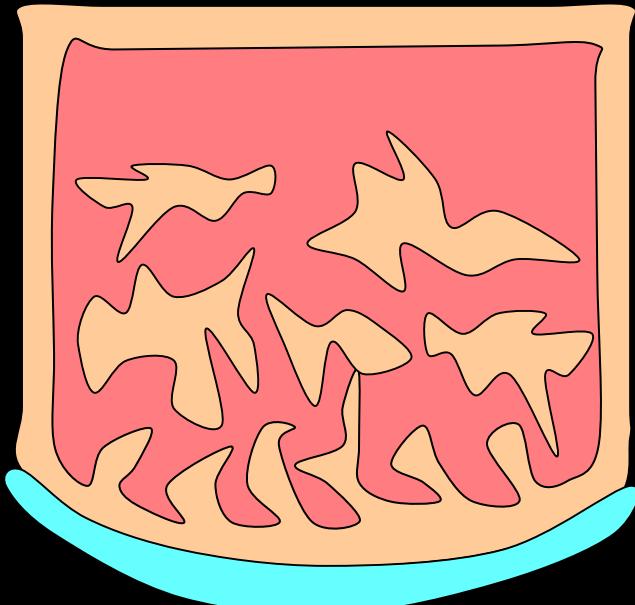
crepitus

X-ray

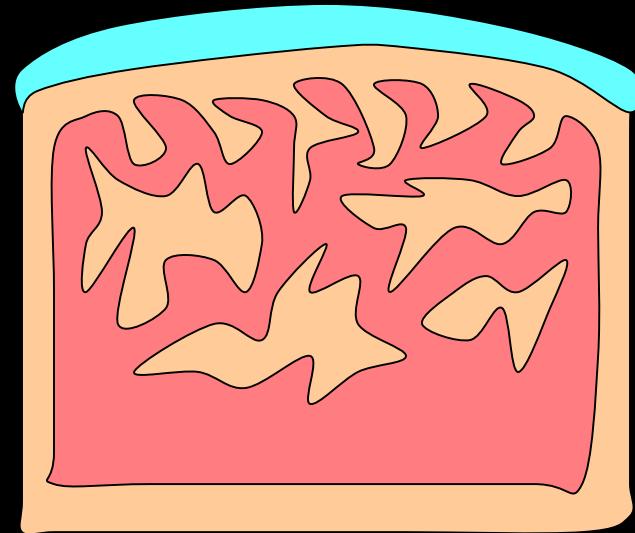
X-ray

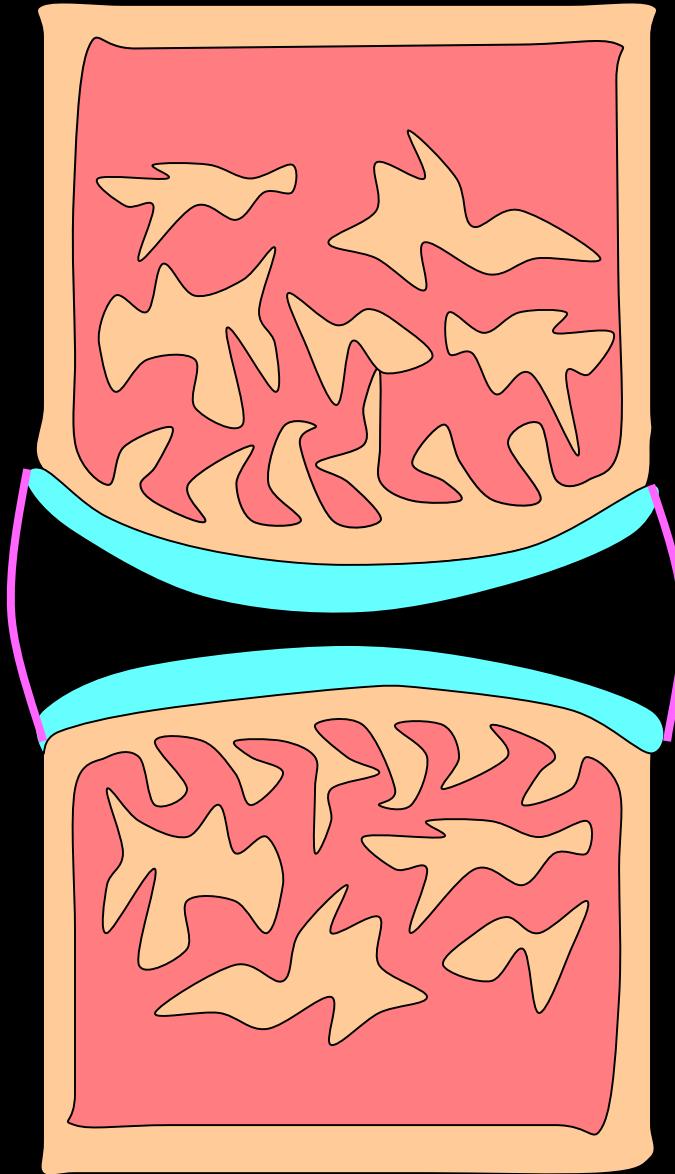
SOURCE OF PAIN





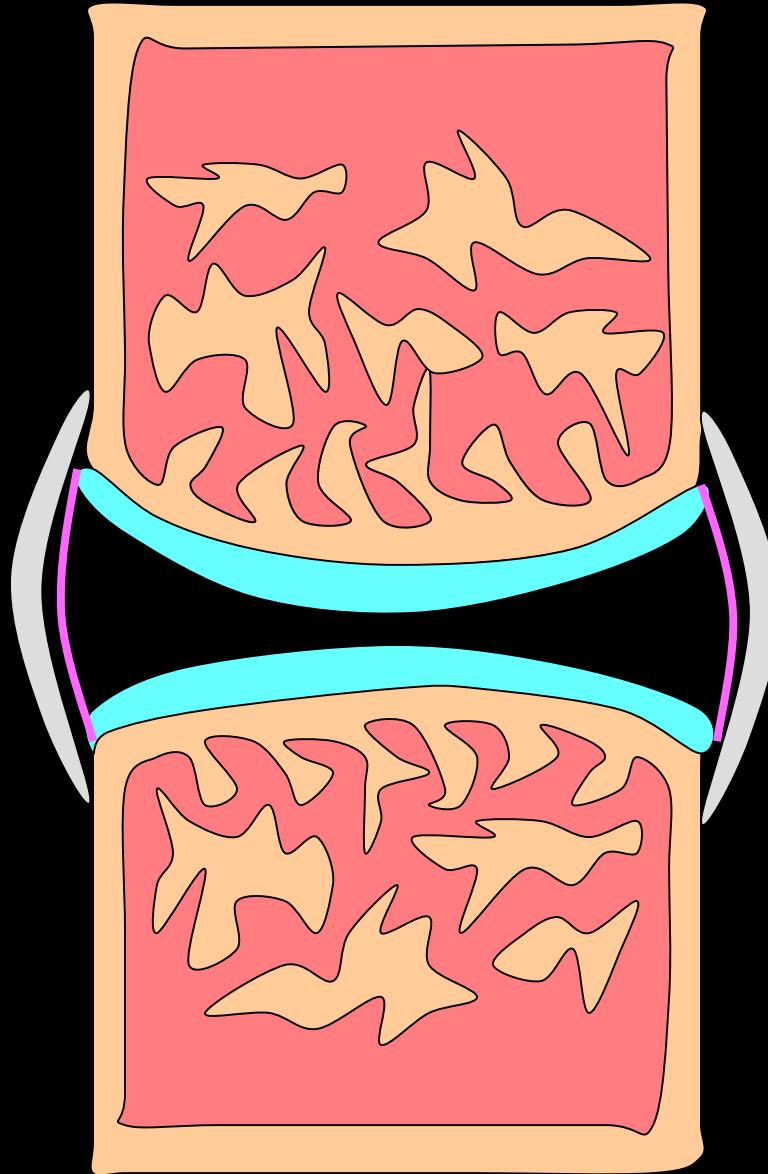
articular cartilage





articular cartilage

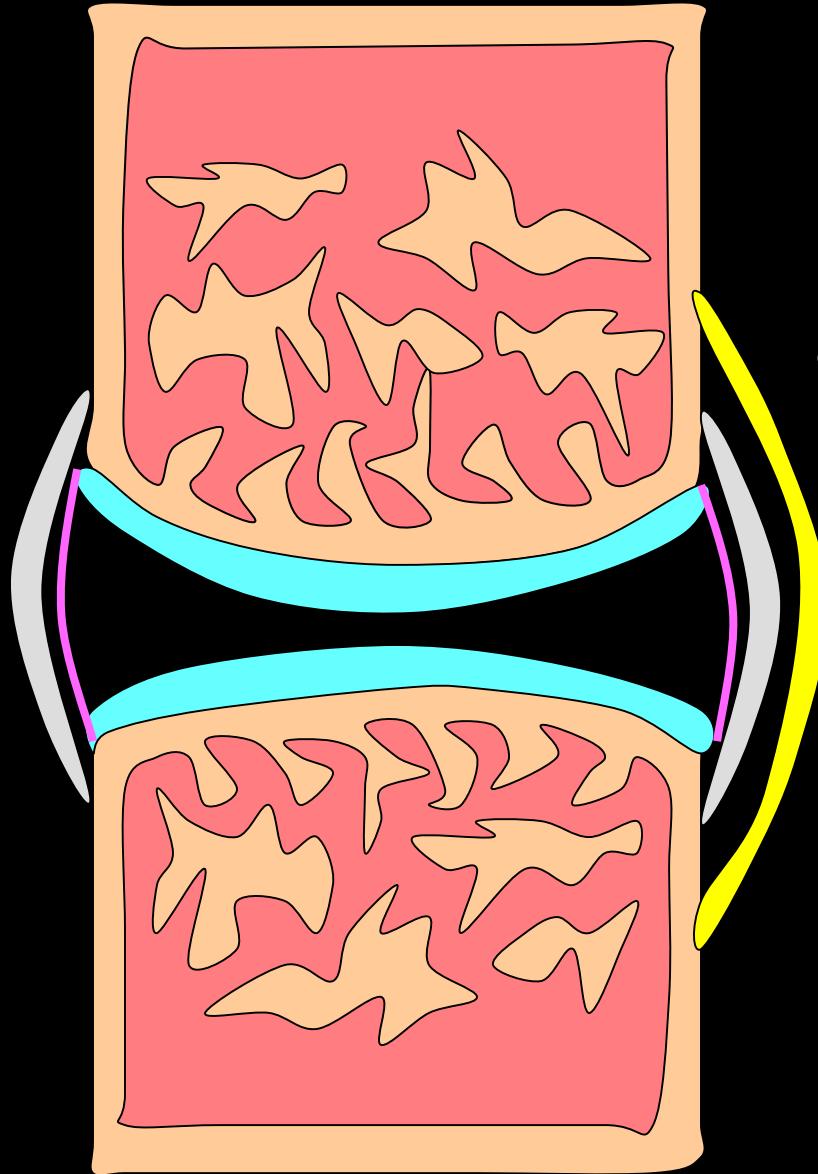
synovium



articular cartilage

synovium

capsule

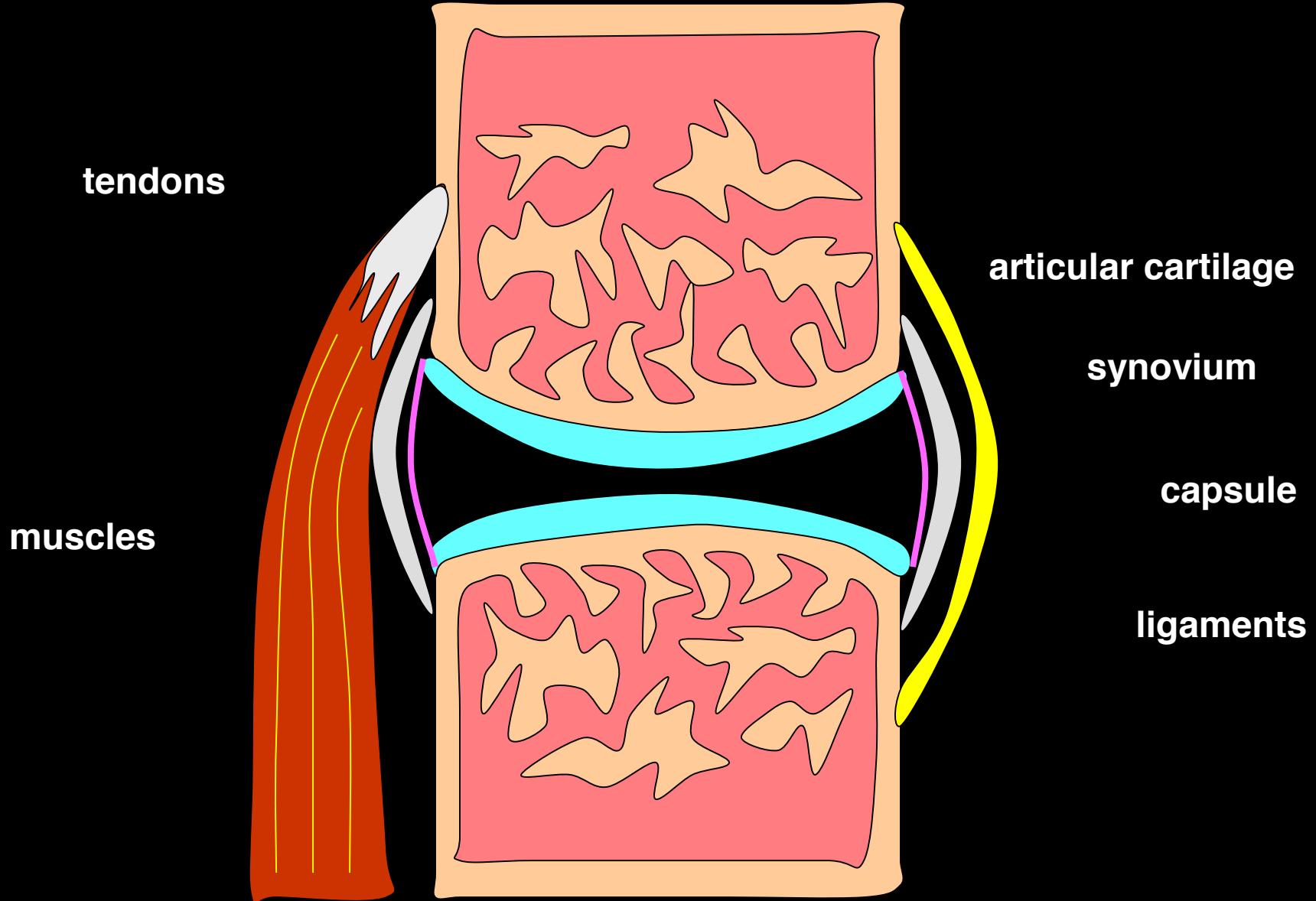


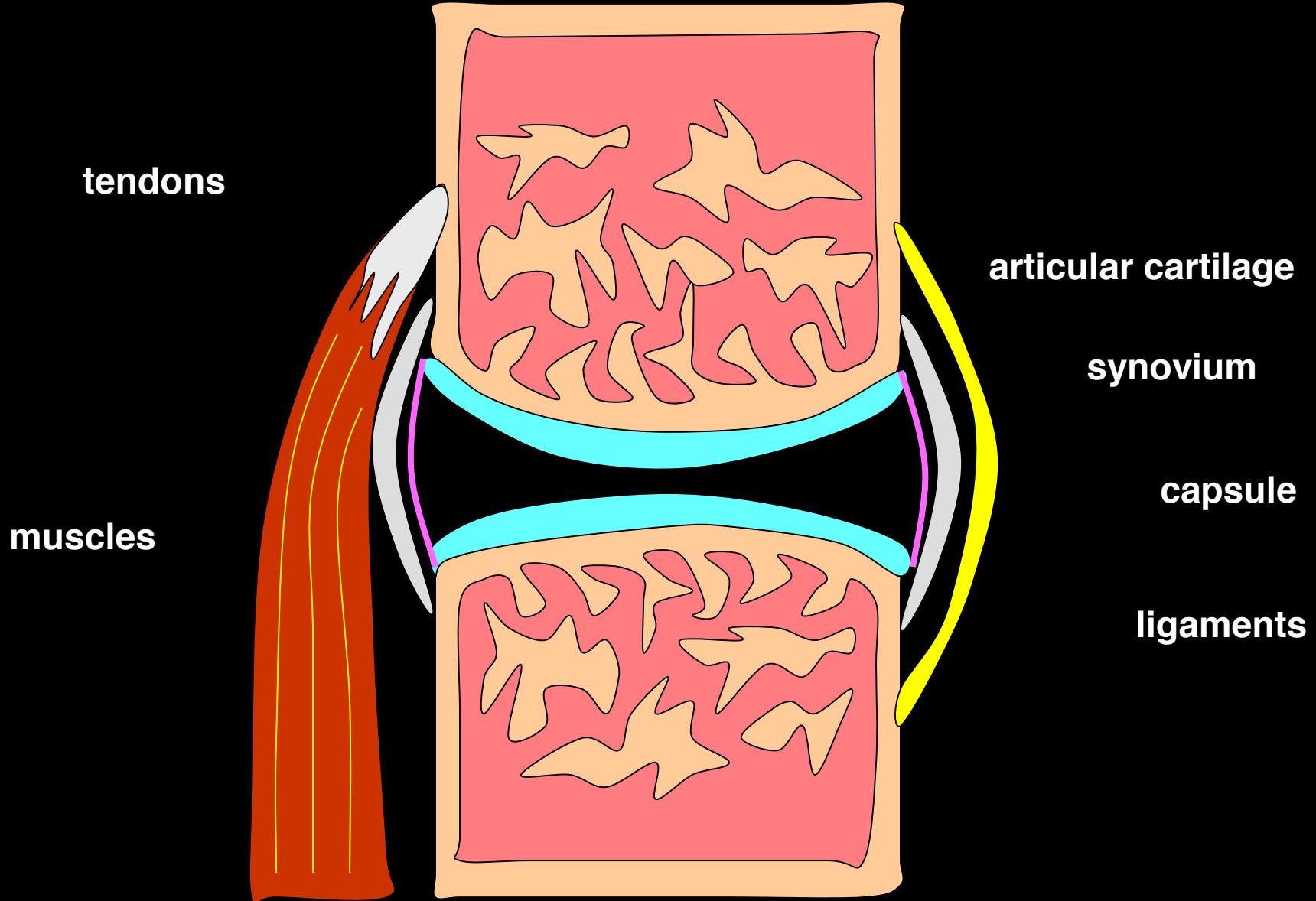
articular cartilage

synovium

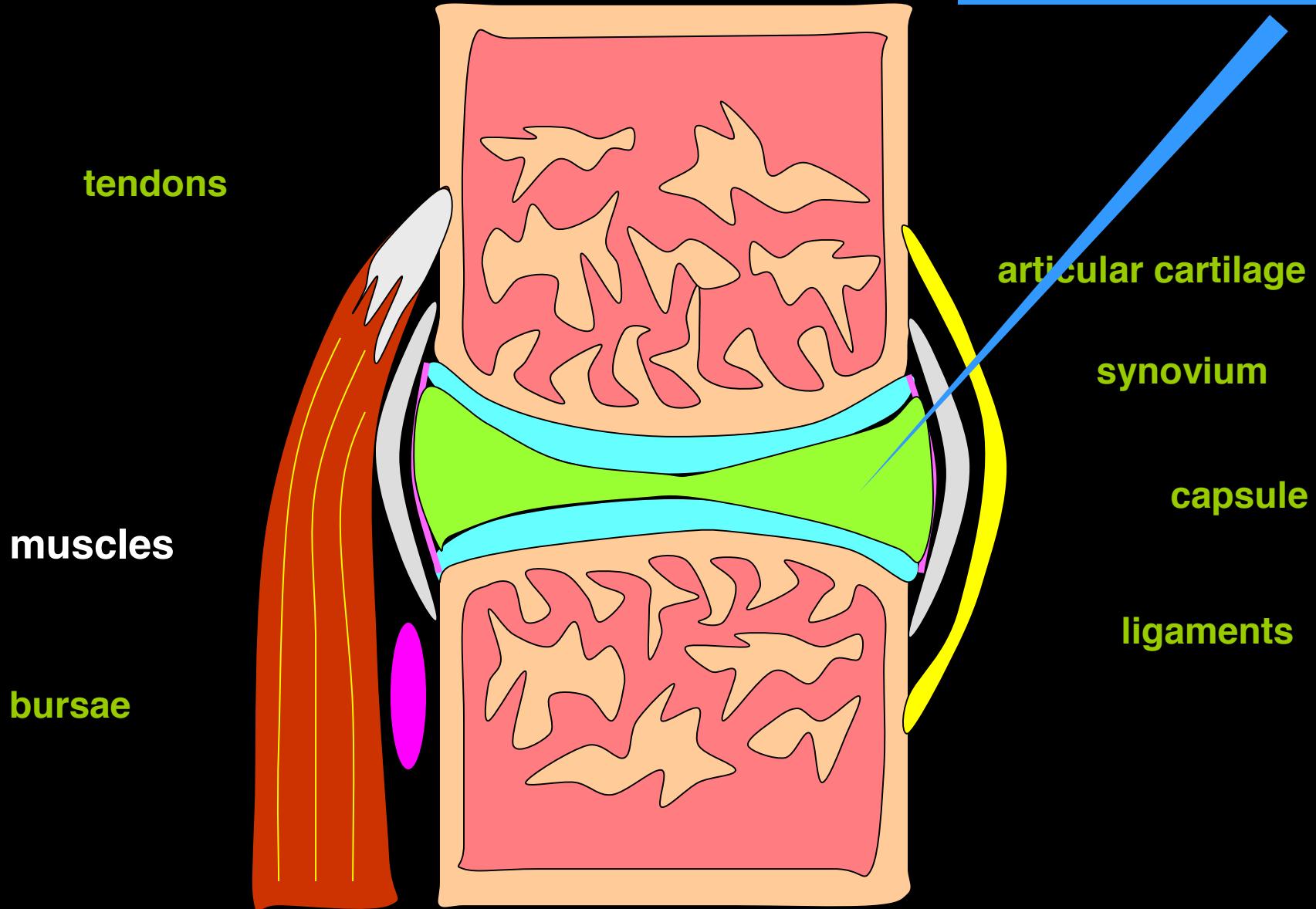
capsule

ligaments

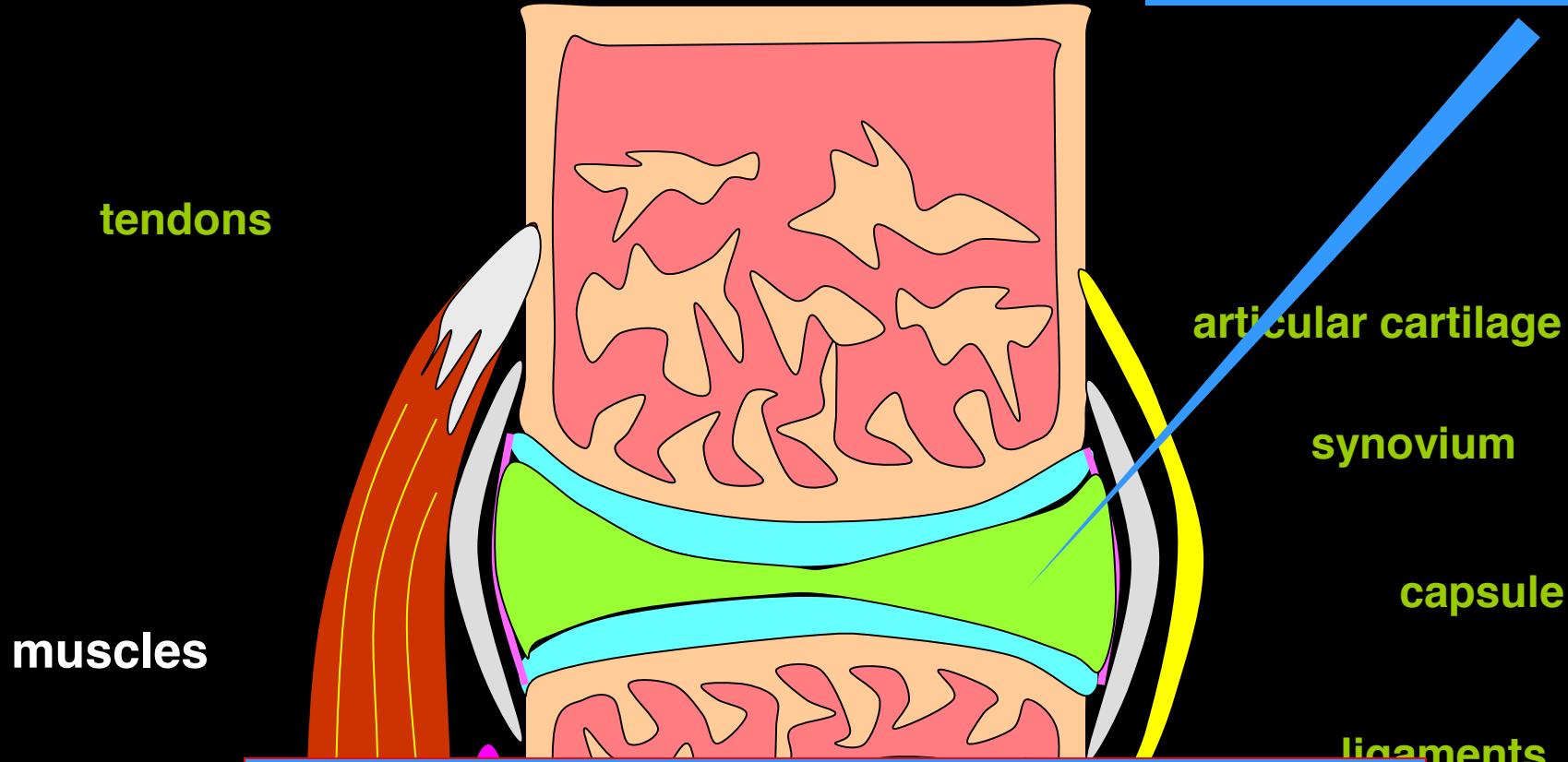




IA local anaesthetic



IA local anaesthetic



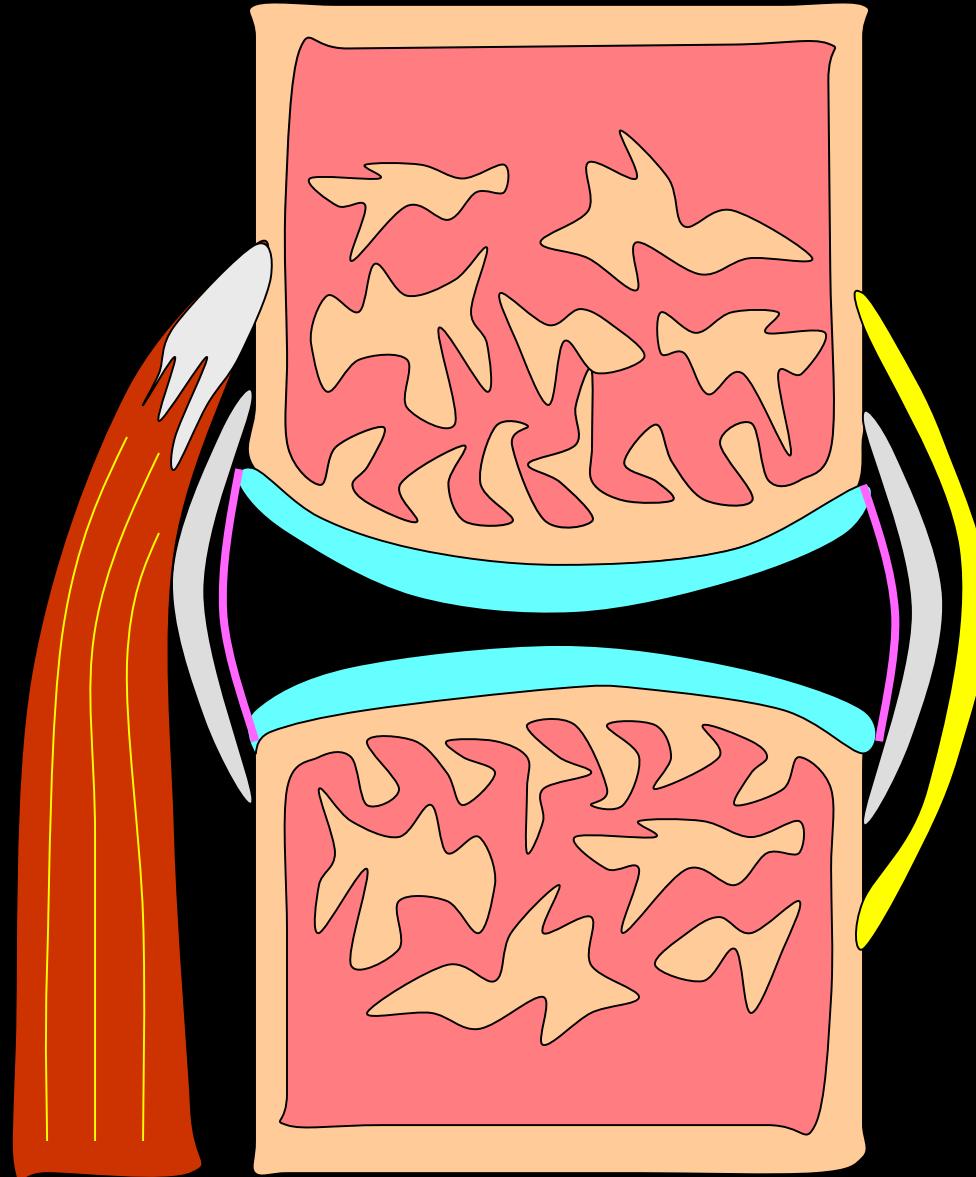
bursae

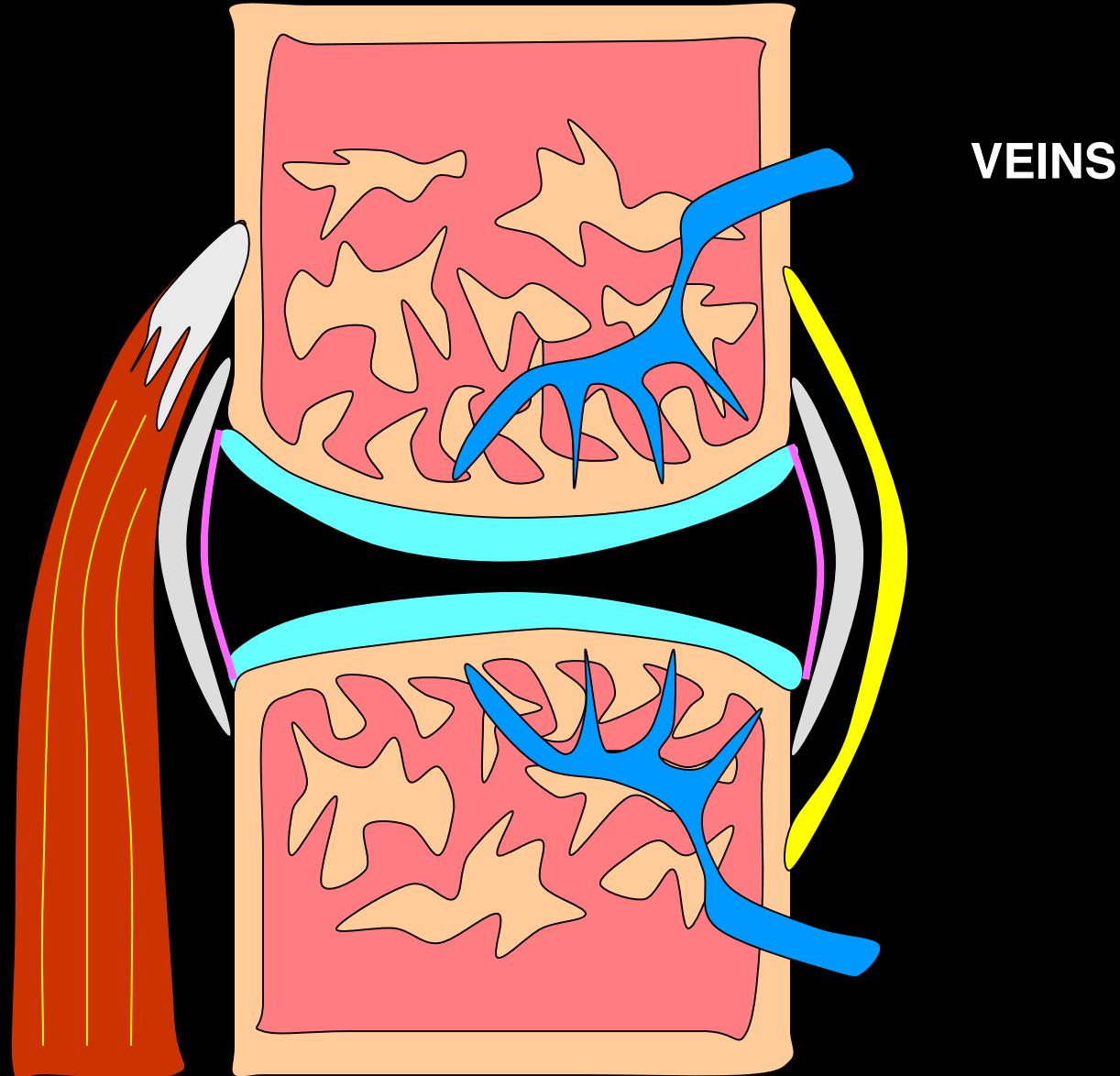
Creamer et al. J Rheumatol 1996; 23:1031-1036

VAS = 0 in 6/10 after LA;

1/10 with NS

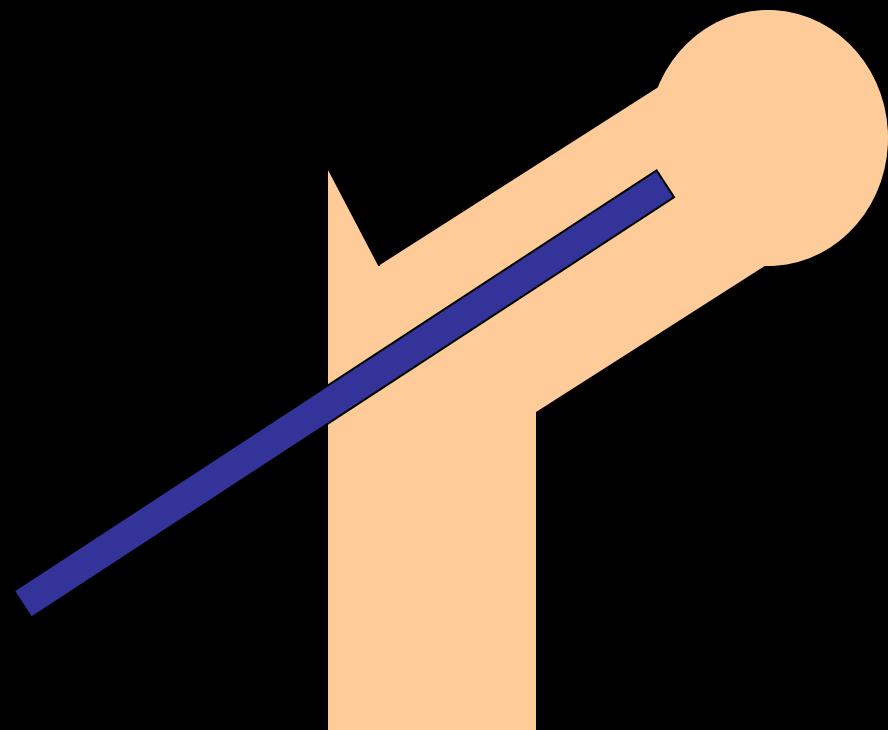
OTHER SOURCES





INTRAOSSSEOUS VENOUS HYPERTENSION

Arnoldi CC. Vascular aspects of degenerative joint disorders: a synthesis. Acta Orthop Scandinav 1994; Supp 261



INTRAOSSSEOUS VENOUS HYPERTENSION

Arnoldi CC. Vascular aspects of degenerative joint disorders: a synthesis. Acta Orthop Scandinav 1994; Supp 261

	SIDE	
	PAINFUL	NORMAL
Femoral Neck	48	19
Pressure (mm Hg)	28 – 75	14 – 25

INTRAOSSSEOUS VENOUS HYPERTENSION

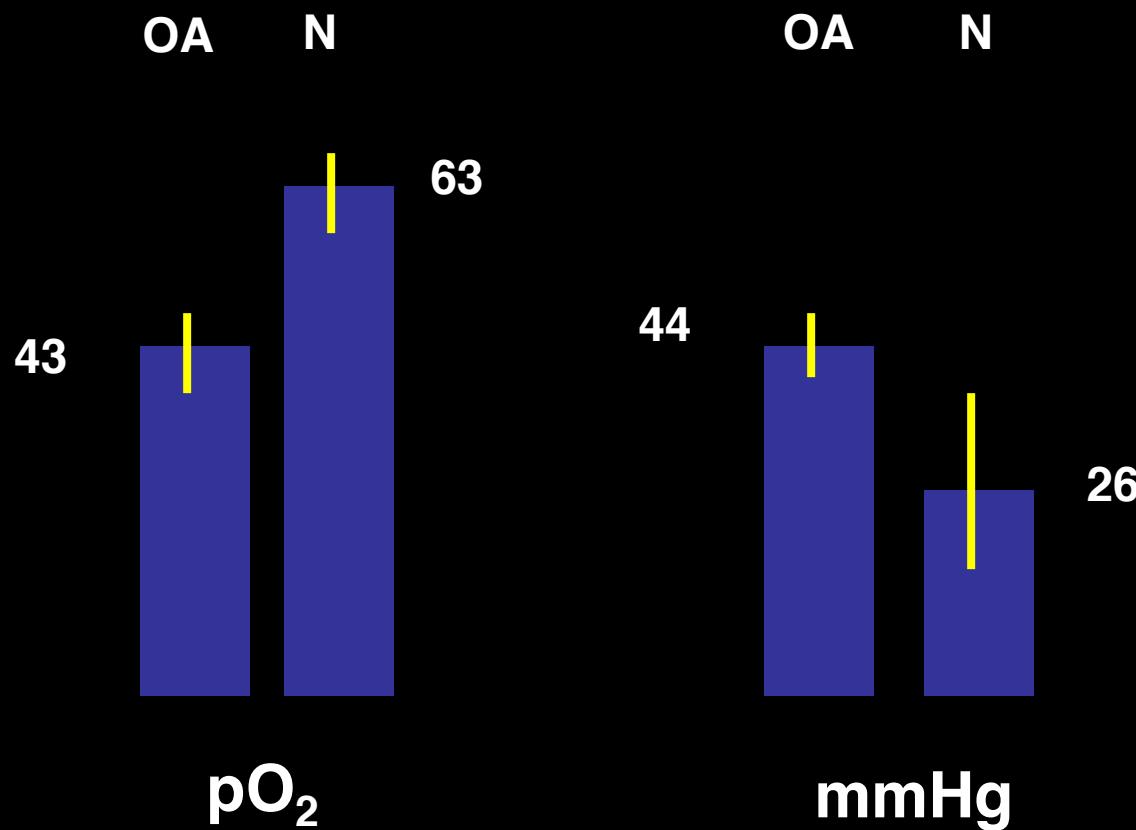
Arnoldi CC. Vascular aspects of degenerative joint disorders: a synthesis. Acta Orthop Scandinav 1994; Supp 261

	SIDE	
	PAINFUL	NORMAL
Femoral Neck	48	19
Pressure (mm Hg)	28 – 75	14 – 25

Venography: Enlarged veins, delayed emptying

INTRAOSSSEOUS VENOUS HYPERTENSION

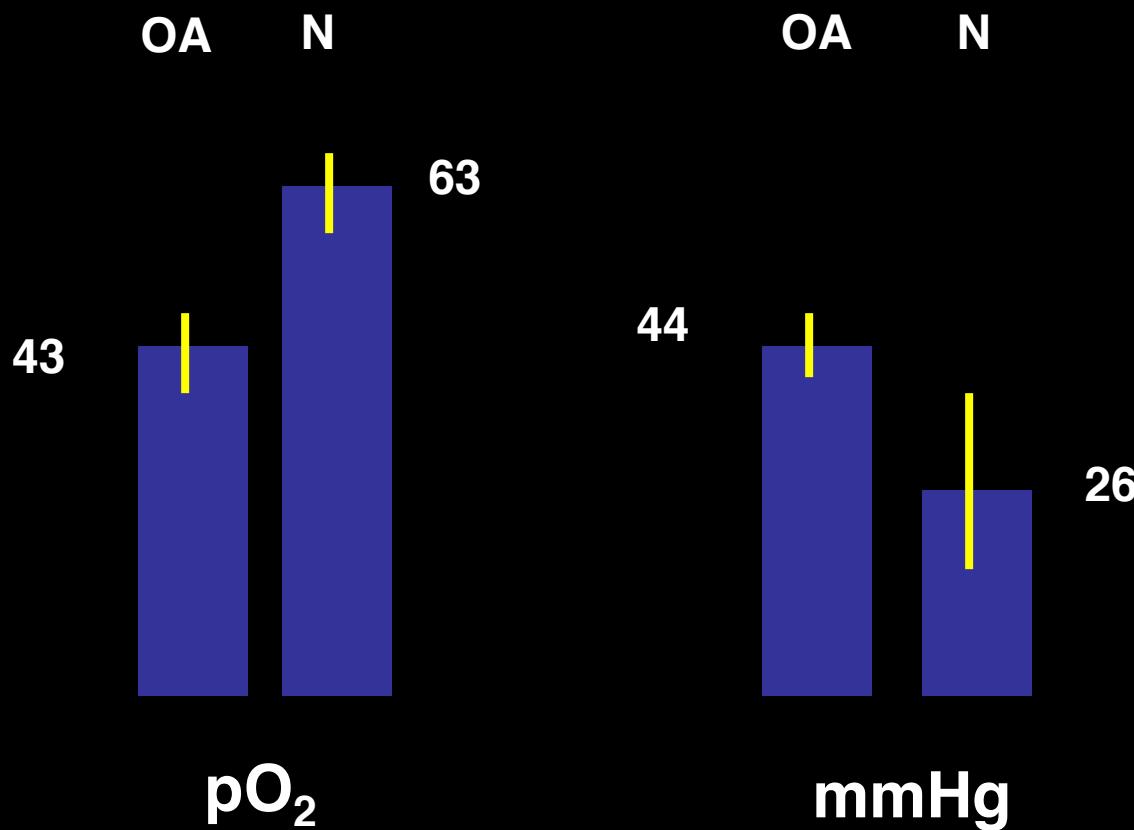
Kaier et al. Sem Arthr Rheum 1989; 18 (supp 2):57-60



INTRAOSSSEOUS VENOUS HYPERTENSION

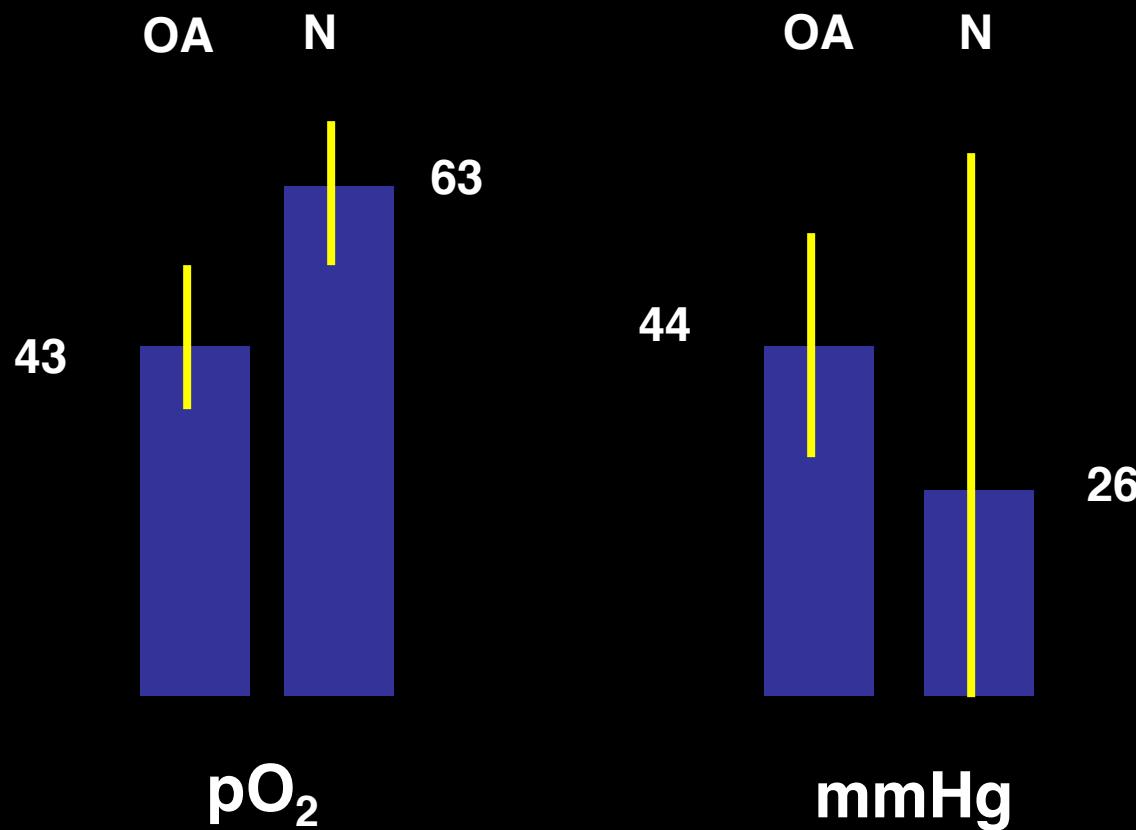
$$sem = \sigma / \sqrt{n}$$

Kaier et al. Sem Arthr Rheum 1989; 18 (supp 2):57-60

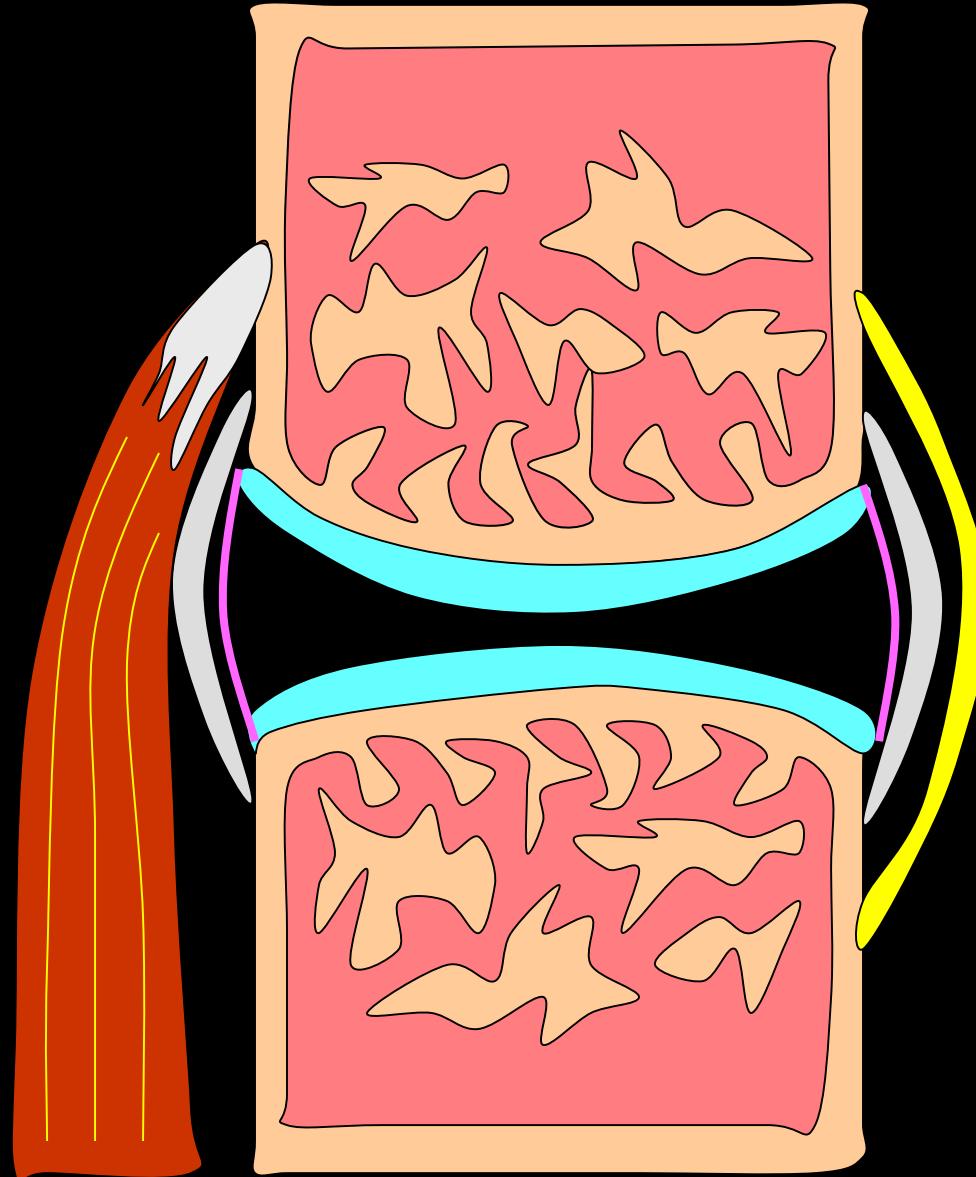


INTRAOSSSEOUS VENOUS HYPERTENSION

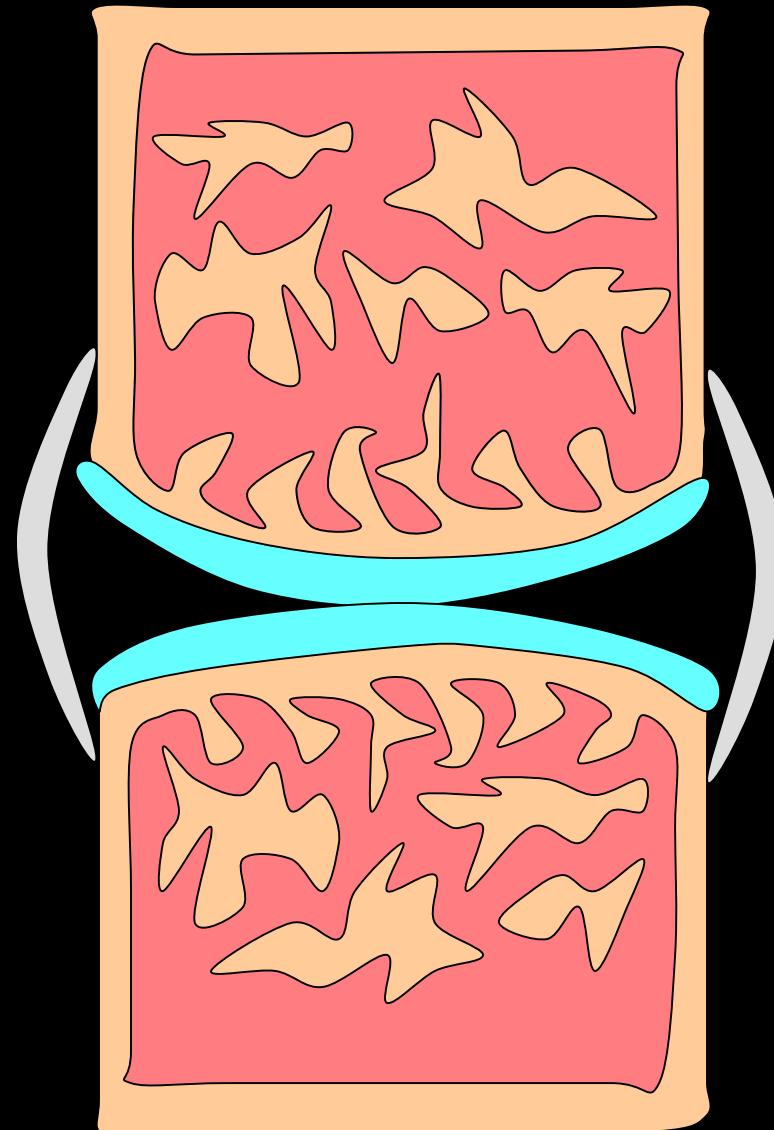
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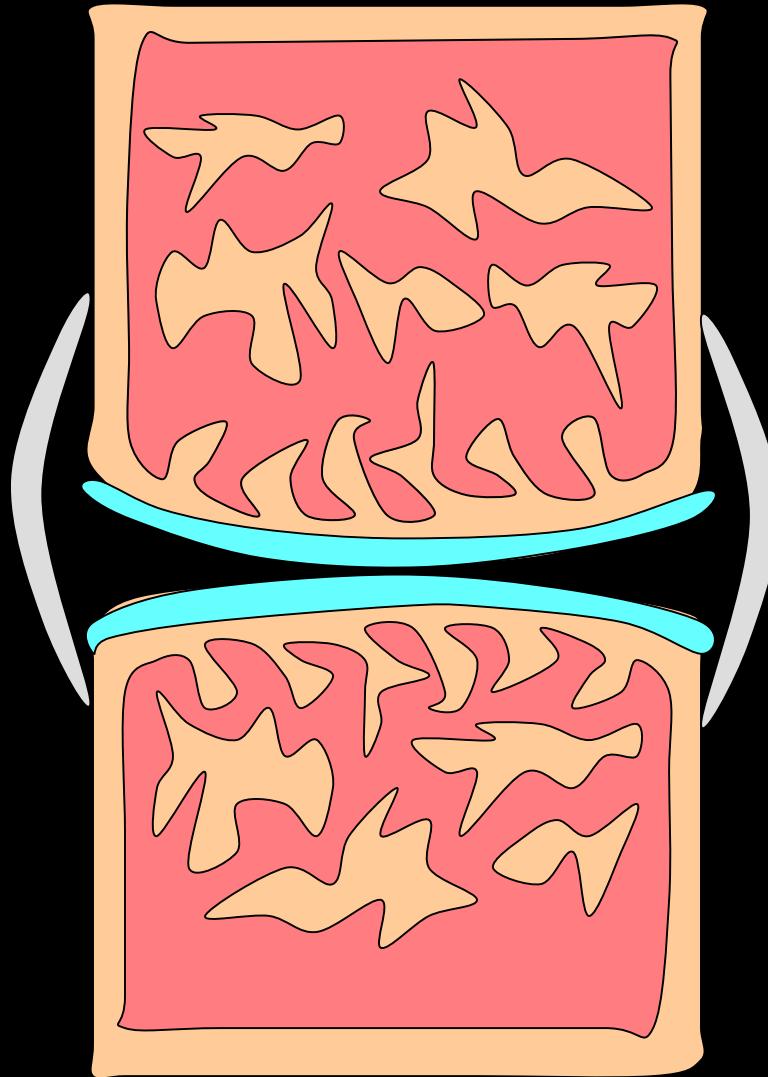
OTHER SOURCES



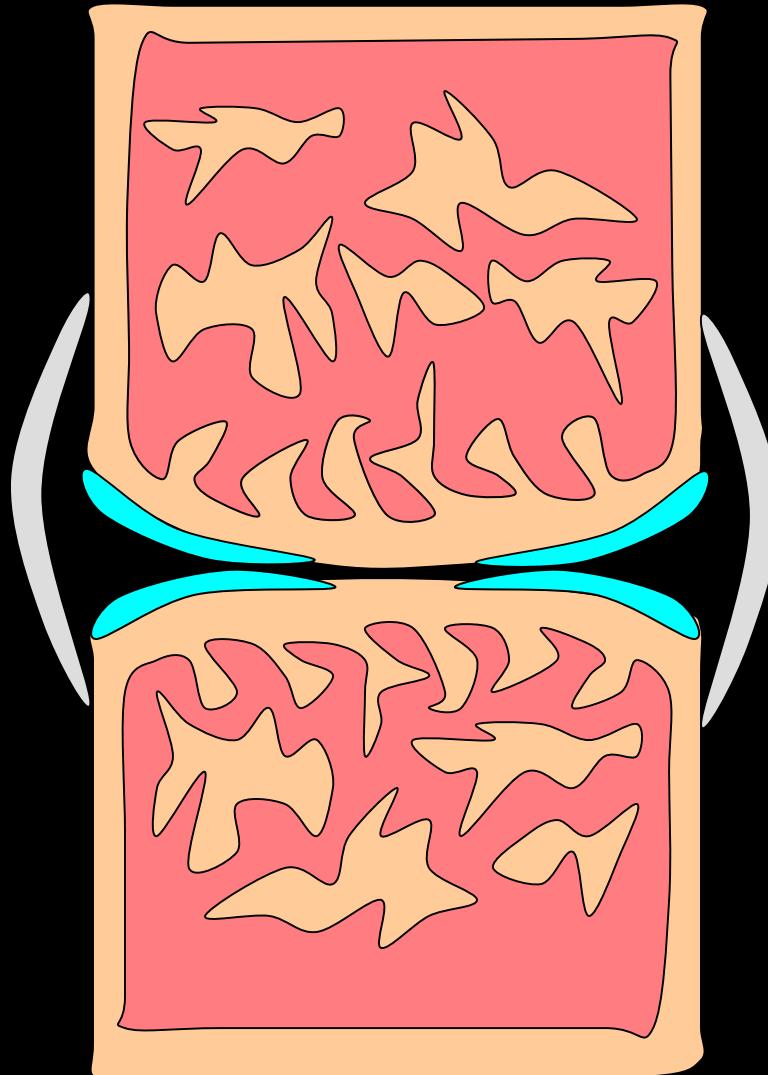
OTHER SOURCES



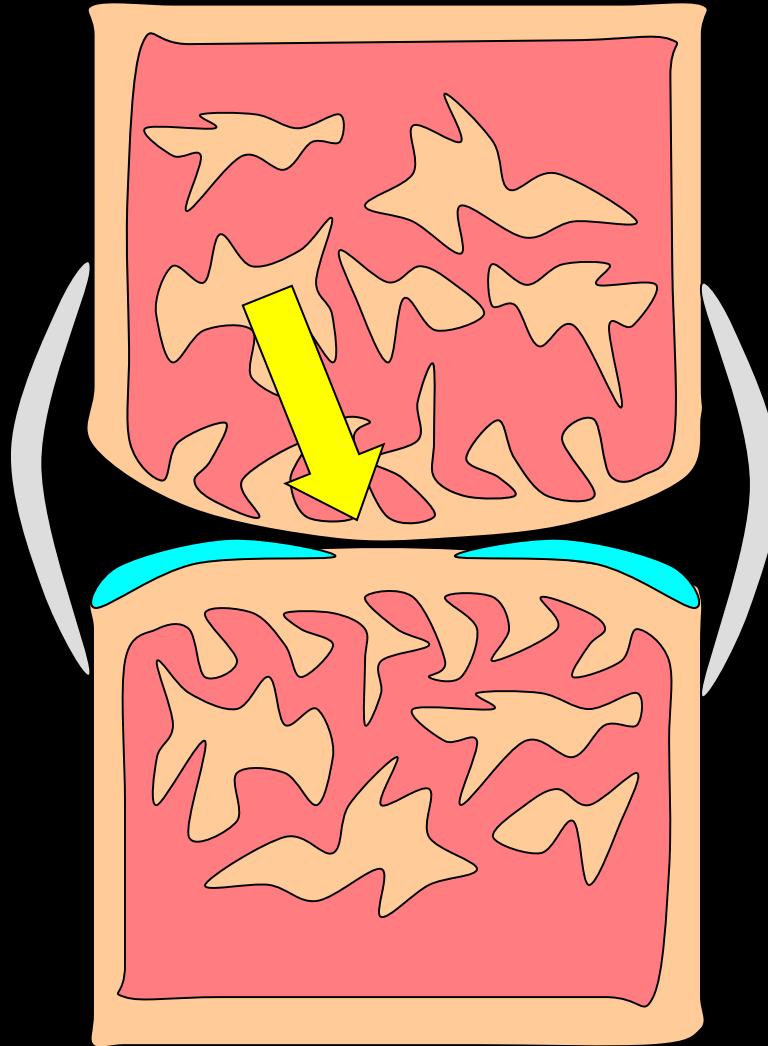
OTHER SOURCES



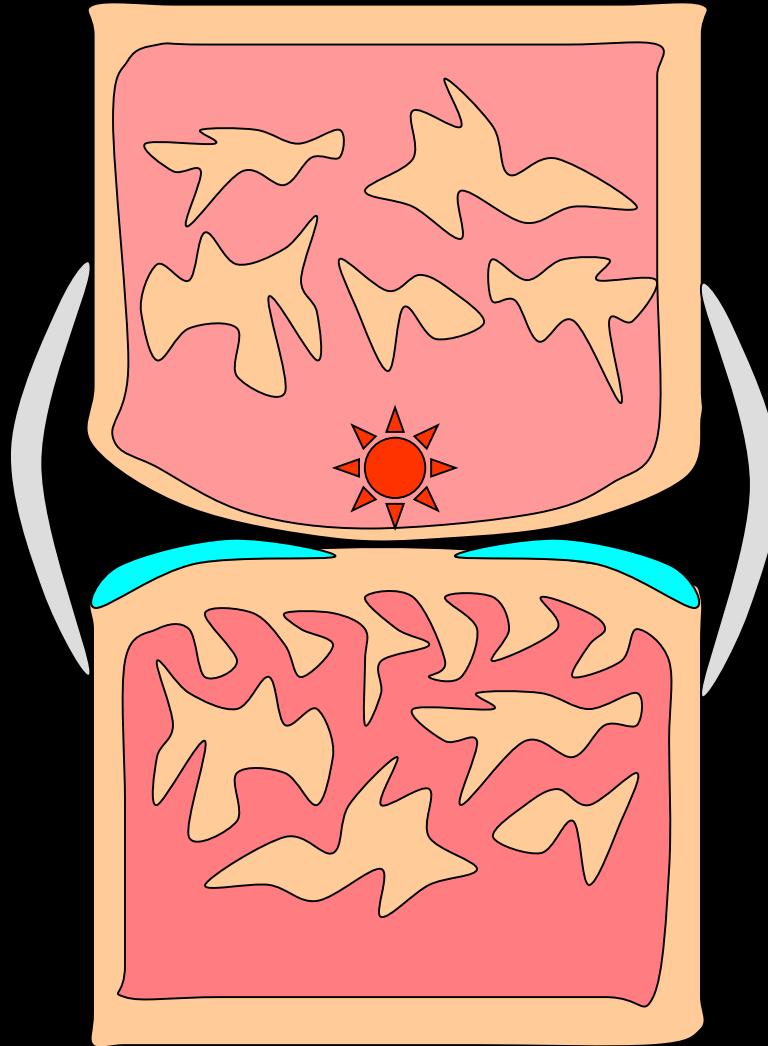
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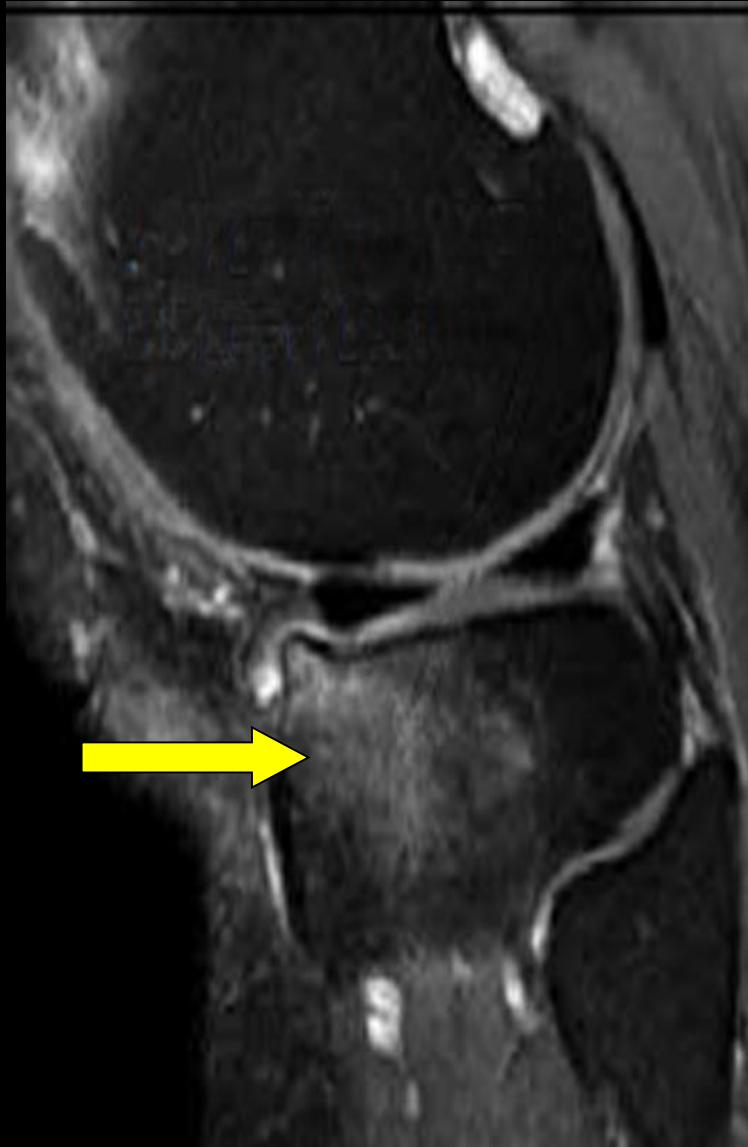


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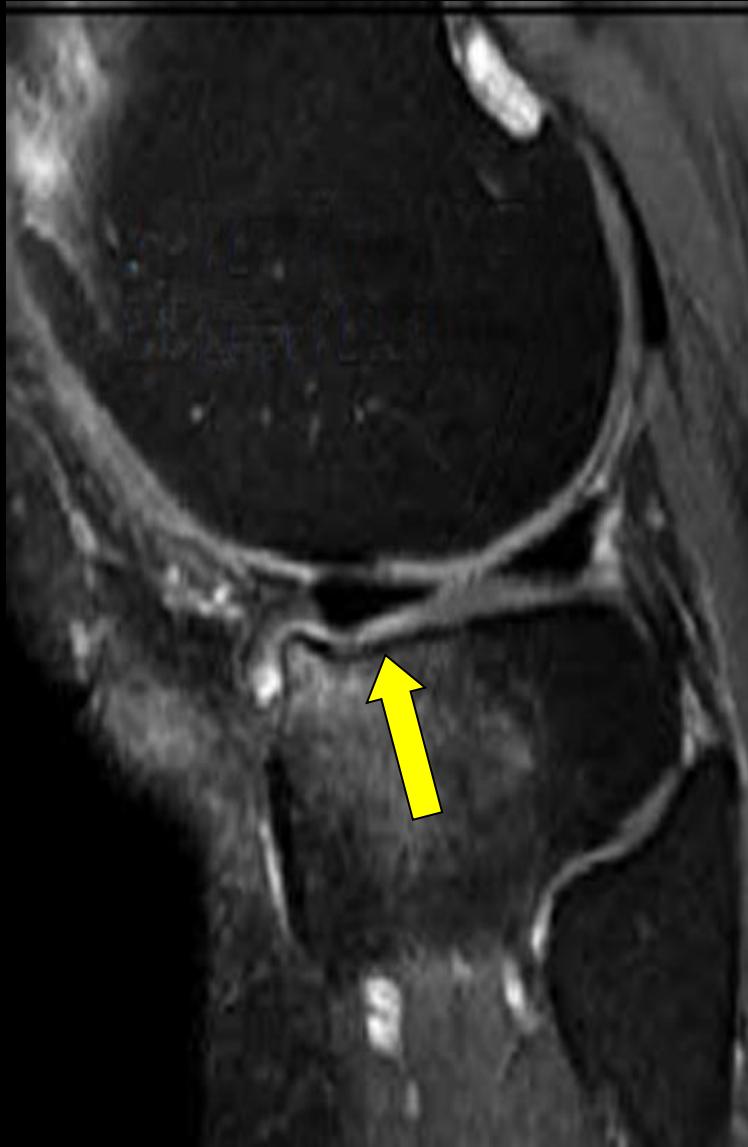


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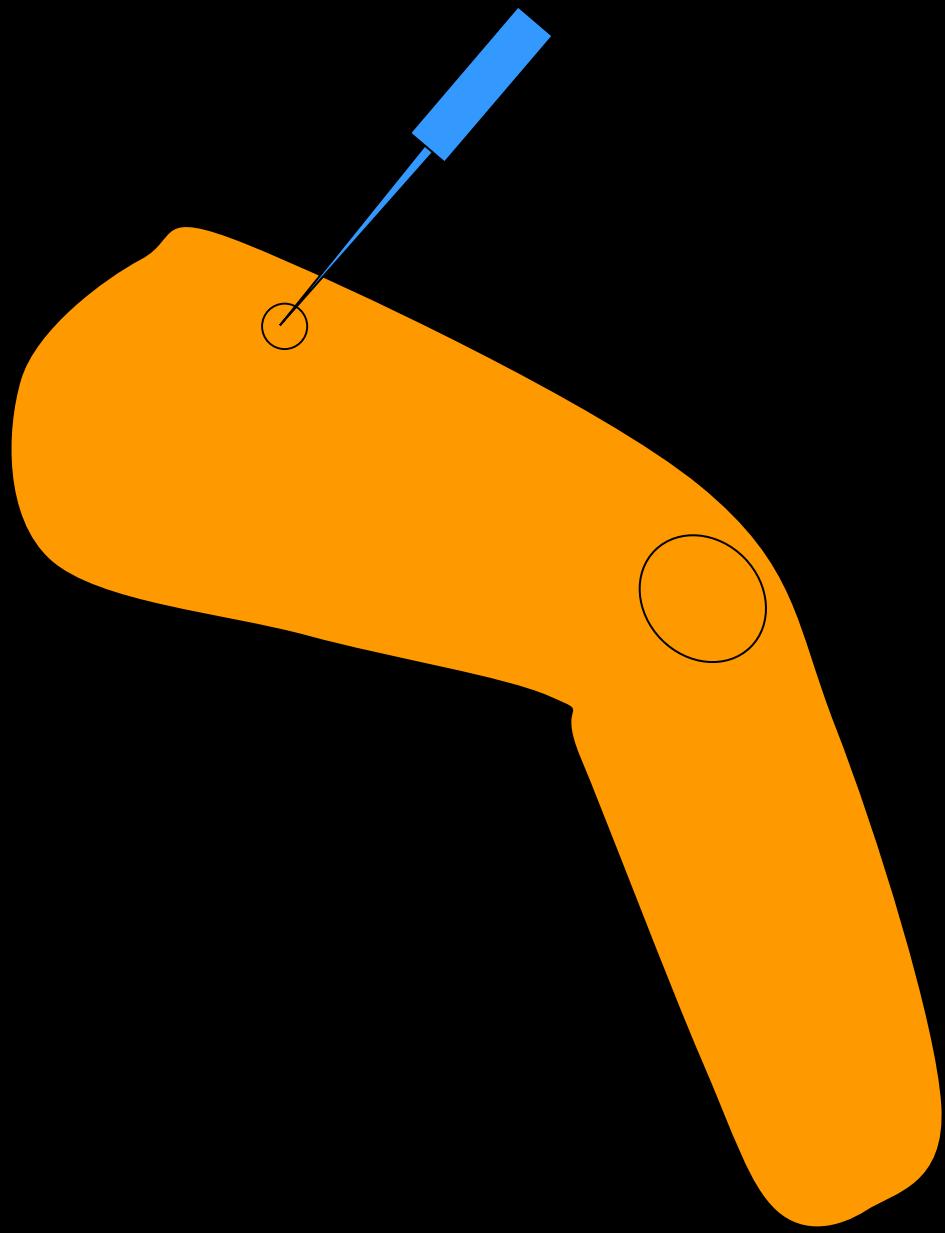
Jones G. Osteoarthritis. Where are we for pain and therapy in 2013? Australian Family Physician 2013; 42:766-769

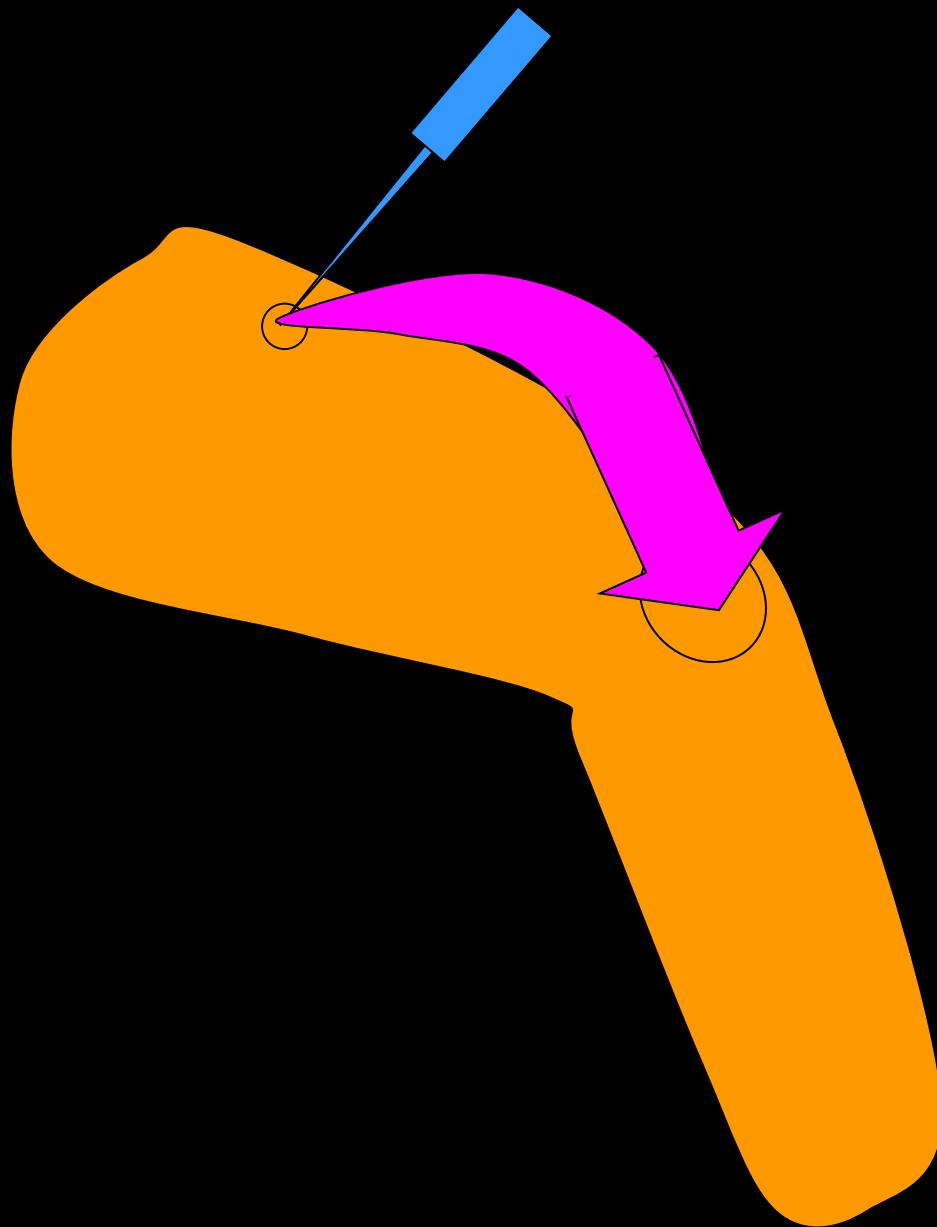


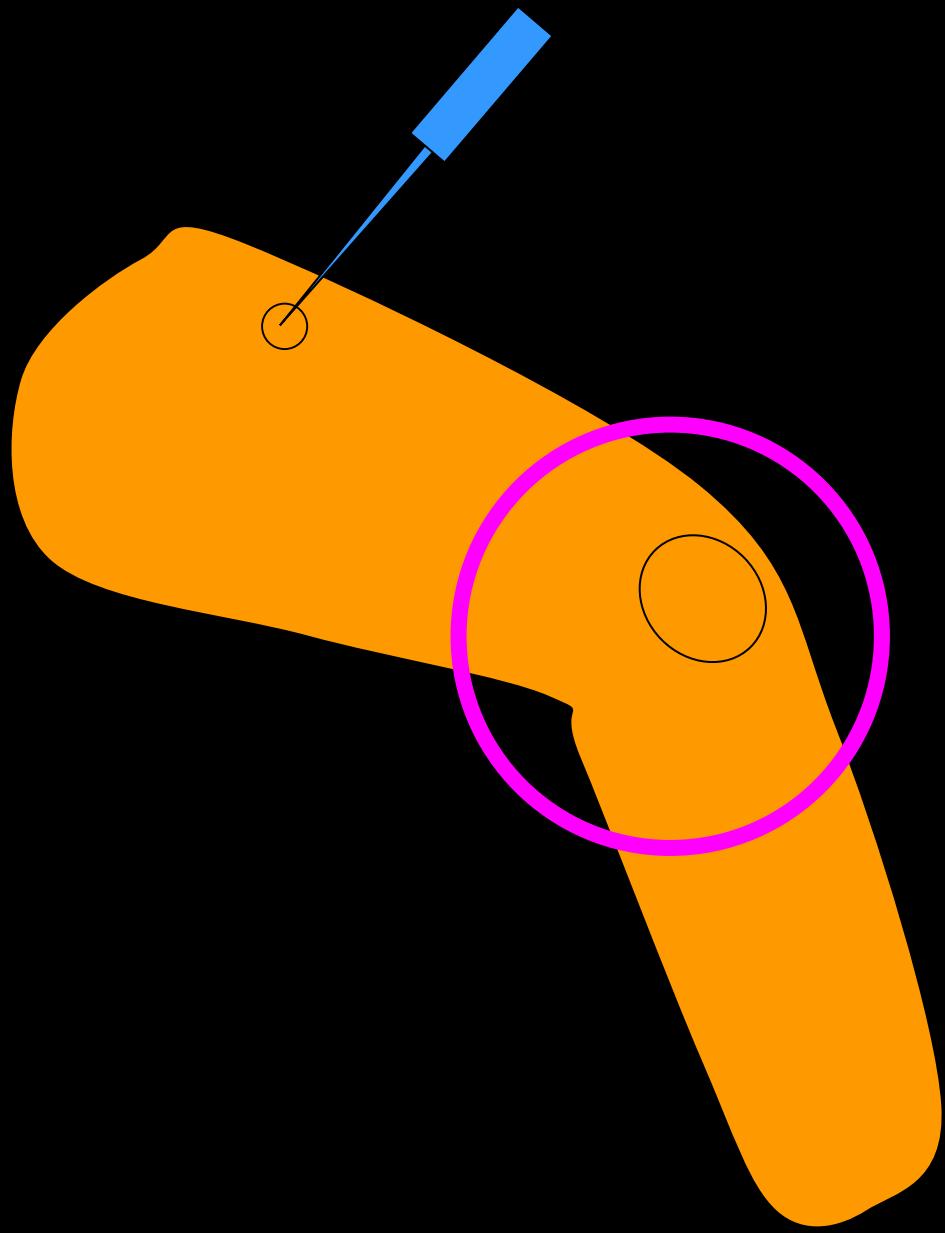
Jones G. Osteoarthritis. Where are we for pain and therapy in 2013? Australian Family Physician 2013; 42:766-769

OTHER SOURCES









ISSUES

ISSUES

irregular

diagnostic criteria

ISSUES

irregular

poor correlation

diagnostic criteria

with pain

ISSUES

irregular
poor correlation
uncertain source
diagnostic criteria
with pain

ISSUES

irregular

poor correlation

uncertain source

diagnostic criteria

with pain

uncertain
mechanism

ISSUES

irregular

poor correlation

uncertain source

diagnostic criteria

with pain

uncertain
mechanism

DIFFERENT
MECHANISMS

ISSUES

irregular

poor correlation

uncertain source

diagnostic criteria

with pain

uncertain
mechanism

DIFFERENT
CONDITIONS

DIFFERENT
MECHANISMS

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uncertain
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DIFFERENT
CONDITIONS

DIFFERENT
MECHANISMS

MISMATCH WITH TREATMENT

ISSUES

irregular

poor correlation

uncertain source

diagnostic criteria

with pain

uncertain
mechanism

DIFFERENT
CONDITIONS

DIFFERENT
MECHANISMS

MISMATCH WITH TREATMENT

UNPREDICTABLE OUTCOMES
IF ANY

“We all know what we mean”

“We all know what we mean”

Then why is it all not working;

or working sometimes – accidentally?

**You're not keeping the patients
out of my Hospital**