Lecture 15 – Overview of selected synovial joints

0:00:00.030,0:00:04.890
hello welcome to the video for the
second part of lecture 15 what I'm going to

0:00:04.890,0:00:09.240
do here is do a short overview of some
of the synovial joints in the body and

0:00:09.240,0:00:12.719
what I'd like you to do is pay special
attention to some of the things I point

0:00:12.719,0:00:18.840
out that are going to be tested on the
exam on articulation and joints so let's

0:00:18.840,0:00:23.670
move along we're going to first cover the
shoulder joint notice that in the upper

0:00:23.670,0:00:29.130
portion of the slide I have it also is
called the glenohumeral and this is of

0:00:29.130,0:00:32.640
course is in red that means that you'll
need to know this you'll notice that one

0:00:32.640,0:00:35.460
of the things that I want you to know
about each of the joints that we cover

0:00:35.460,0:00:40.860
are the anatomical names so for example
the shoulder is glenohumeral it's also

0:00:40.860,0:00:45.239
called the humeroscapula joint as
you'll see down below so both of those

0:00:45.239,0:00:50.100
names are fair game so you should know
those what I want to do here is just

0:00:50.100,0:00:54.750
review the structures of synovial joints
remember that synovial joints have

0:00:54.750,0:00:58.739
specific structure and one of the things
we talked about of course was a joint

0:00:58.739,0:01:03.270
cavity which you see in here so the
space between the bones and in this case

0:01:03.270,0:01:07.290
this is filled with a synovial fluid
we'll talk about that in a second notice

0:01:07.290,0:01:12.479
that each of the bones that enters into
this joint has hyaline cartilage as what

0:01:12.479,0:01:16.020
we call articular cartilage on the ends
of the bone so that the bones don't rub

0:01:16.020,0:01:20.400
together instead the cartilage does
notice also that this is surrounded by a

0:01:20.400,0:01:24.299
joint capsule so here you'll see the
joint capsule that surrounds the

0:01:24.299,0:01:26.549
shoulder joint
remember this is dense fibrous

0:01:26.549,0:01:31.979
connective tissue you'll also notice
that inside we have a synovial membrane

0:01:31.979,0:01:37.439
shown in blue and this is important
because this membrane secretes the

0:01:37.439,0:01:41.579
synovial fluid that's inside the joint
remember when we talked about this

0:01:41.579,0:01:45.030
remember synovial fluid is important
because it nourishes the articular

0:01:45.030,0:01:50.100
cartilage especially the outer portion
of that works as a shock absorber and it

0:01:50.100,0:01:53.790
also works as a lubricant so that's
important as well one of the things we

0:01:53.790,0:01:58.530
didn't cover yet is what a bursa is and

here you'll see something called a sub

0:01:58.530,0:02:03.570
deltoid bursa this is actually just a
synovial membrane filled with synovial

0:02:03.570,0:02:06.960
fluid and these little packets are
placed in areas of the body where

0:02:06.960,0:02:11.129
there's a lot of friction so any place
where muscles and tendons might move

0:02:11.129,0:02:14.080
relative to a bone and we need to reduce
the

0:02:14.080,0:02:17.800
in a little bit you'll see a bursa and
remember we talked about inflammation

0:02:17.800,0:02:22.120
and we said that any anatomical
structure that ends an -itis was

0:02:22.120,0:02:26.680
inflamed so for example an inflammation
of a bursa would be a bursitis now the

0:02:26.680,0:02:29.020
other thing you're gonna see that we're
going to talk about in a minute is that

0:02:29.020,0:02:33.940
usually around these joints that are the
synovial joints that have this joint

0:02:33.940,0:02:38.830
cavity there are additional structures
that reinforce the joint so soft tissues

0:02:38.830,0:02:42.430
for example we might have some ligaments
that crossover we might have some

0:02:42.430,0:02:46.390
tendons of muscles that cross over the
joint and reinforce it and we're gonna

0:02:46.390,0:02:49.930
talk about some of those in a couple of
seconds notice one thing I do want you

0:02:49.930,0:02:54.220
to know about the shoulder joint is that
it has a very wide range of motion but

0:02:54.220,0:02:57.970
it's not that stable and one of the
reasons for that is notice how shallow

0:02:57.970,0:03:03.760
the glenoid cavity or glenoid fossa is
and this actually would allow the head

0:03:03.760,0:03:08.170
of the humerus frequently to slip out
down this way so if somebody's muscles

0:03:08.170,0:03:12.459
and soft tissues around the joint are a
little bit weakened it may not be very

0:03:12.459,0:03:17.170
difficult to dislocate the head of the
humerus from the glenoid fossa and this

0:03:17.170,0:03:20.680
would be a downward kind of movement
here so let's take a look at the next

0:03:20.680,0:03:24.220
slide and look at a couple of structures
around the joint third of reinforcing

0:03:24.220,0:03:28.450
here you see a number of ligaments and
soft tissues that are around the joint

0:03:28.450,0:03:32.650
here you see a subscapular bursa so
another bursa that's around the shoulder

0:03:32.650,0:03:36.040
joint and on the right side here you'll
also see something very important called

0:03:36.040,0:03:41.350
a glenoid labrum this tan area that you
see around the glenoid cavity or glenoid

0:03:41.350,0:03:46.360
fossa is actually a ring of
fibrocartilage and what a labrum does is

0:03:46.360,0:03:51.190
to deepen the pocket of the bone so

remember how shallow this glenoid cavity

0:03:51.190,0:03:56.290
or glenoid fossa actually was what the
labrum does is it tends to deepen that

0:03:56.290,0:04:01.239
cup so that it more strongly holds the
head of the humerus in place and over

0:04:01.239,0:04:04.480
here as well you'll see some
glenohumeral ligaments that are right

0:04:04.480,0:04:07.690
here these are in the anterior portion
of the shoulder so these are reinforcing

0:04:07.690,0:04:12.489
for the shoulder joint as well now here
you see a side view and you'll see the

0:04:12.489,0:04:16.269
glenoid cavity or glenoid fossa here of
course we've removed the humerus and

0:04:16.269,0:04:20.440
you'll also notice that there are some
muscles that surround the shoulder that

0:04:20.440,0:04:24.669
are called rotator cuff muscles and
these are commonly known as the SITS

0:04:24.669,0:04:30.310
muscles S-I-T-S one of the reasons for
is you'll see that we have the tendon of

0:04:30.310,0:04:35.650
the supraspinatus so there's the s we
have the tendon of the infraspinatus the

0:04:35.650,0:04:40.870
I, tendon of the teres minor which is
the T and on the other side you see we

0:04:40.870,0:04:45.250
have a tendon of the subscapularis or
the actual subscapularis muscle which is

0:04:45.250,0:04:50.380
the final S in the SITS so these are
called the rotator cuff muscles these

0:04:50.380,0:04:54.040
surround the shoulder joint and these
reinforce it and this is one of the

0:04:54.040,0:04:57.160
places that you might have heard that is
frequently injured especially in

0:04:57.160,0:05:01.780
athletes like for example hockey players
or baseball players especially baseball

0:05:01.780,0:05:05.830
pitchers so sometimes these muscles
around the shoulder are injured and this

0:05:05.830,0:05:10.990
would be called a rotator cuff tear now
the next joint we want to talk about is

0:05:10.990,0:05:14.830
the elbow joint once again just to
review the characteristics of synovial

0:05:14.830,0:05:19.539
joints you see a joint space in here
articular cartilage on each of the bones

0:05:19.539,0:05:24.610
that enters into the joint we have a
synovial membrane inside that secreted

0:05:24.610,0:05:29.500
synovial fluid and then finally we have
a joint capsule on the outside so we

0:05:29.500,0:05:33.810
have all the same structures that we
talked about before that are a part of

0:05:33.810,0:05:39.160
synovial joint now in the elbow we
actually have a few joints combined into

0:05:39.160,0:05:44.380
one location you'll notice that there's
a humeroulnar joint there's a humeroradial

0:05:44.380,0:05:49.660
joint and there's also a radioulnar joint this is actually the main

0:05:49.660,0:05:54.250
one that performs the primary action at
the elbow which is flexion so what

0:05:54.250,0:05:58.090
actually allows the flexion as you see
here is we have the trochlea of the

0:05:58.090,0:06:03.010
humerus and we have the trochlear notch
of the ulna and the rotation of the

0:06:03.010,0:06:07.660
trochlear notch around the trochlea is
what actually performs the hinge joint

0:06:07.660,0:06:12.760
motion at the elbow so the humeroulnar
joint is really the main joint that we

0:06:12.760,0:06:16.389
think of as the elbow however there are
two are the joints one is called a

0:06:16.389,0:06:20.470
humeroradial joint and if you remember
we don't have a view of it here but if

0:06:20.470,0:06:25.450
you remember the radial head when we
flex it extends kind of slides or glides

0:06:25.450,0:06:29.889
along the capitulum of the humerus which
is of course on the lateral side and

0:06:29.889,0:06:35.620
then finally we also have a radioulnar
joint and this joint is actually held in

0:06:35.620,0:06:38.680
place by the annular ligament now you
can see this right here it's actually

0:06:38.680,0:06:41.409
indicated in red but of course we know
it usually is indicated

0:06:41.409,0:06:45.309
in white but this is a ligament
and this actually goes over the head of

0:06:45.309,0:06:49.809
the radius and holds it in place against
the radial notch of the ulna so this is

0:06:49.809,0:06:54.759

called the radioulnar joint now take a
look and try to decide which arm and

0:06:54.759,0:06:59.409
which view of that arm are we looking at
take a second maybe pause the video and

0:06:59.409,0:07:03.159
see if you can come up with it
now one of the things you'll notice is

0:07:03.159,0:07:08.860
that the bone that's closest to us as is
labeled here is the ulna and remember

0:07:08.860,0:07:13.330
the ulna is on the medial side of the arm
so we're looking at a medial view since

0:07:13.330,0:07:17.619
the radius is away from us and this is
lateral so we're looking at a medial

0:07:17.619,0:07:22.149
view of one of the arms and actually the
only way for this to be for us to be

0:07:22.149,0:07:25.989
looking at the inside of an arm would be
of the left arm so we're actually

0:07:25.989,0:07:30.909
looking at a medial view of the left arm
you'll also notice that we have an

0:07:30.909,0:07:35.259
additional bursa here this is an olecranon
bursa and this is one that's

0:07:35.259,0:07:38.800
commonly inflamed in students because
they are always resting their elbows on

0:07:38.800,0:07:42.579
tables when they're studying so
sometimes an inflammation of this bursa,

0:07:42.579,0:07:47.529
so bursitis, here is sometimes referred
to as students elbow I'll look at some

0:07:47.529,0:07:50.829
of the structures around the elbow joint
that reinforce it you can see there's a

0:07:50.829,0:07:55.389
number of ligaments one called the
radial collateral the other called the

0:07:55.389,0:07:59.559
ulnar collateral ligament the annular
ligament as we just said a second ago

0:07:59.559,0:08:02.949
you'll see it here is actually holding
the head of the radius in place against

0:08:02.949,0:08:06.369
the ulna
so a few ligaments that are holding the

0:08:06.369,0:08:10.899
elbow and stabilizing it one of the
things you'll notice is that these three

0:08:10.899,0:08:14.589
boxes in red are things that I want you
to know so you should know about the

0:08:14.589,0:08:18.369
annular ligament and that it's part of
the elbow you should know that the ulnar

0:08:18.369,0:08:22.569
collateral and radial collateral
ligaments are part of the elbow in other

0:08:22.569,0:08:26.739
words if I give you the name of a
ligament and ask you which joint is it a

0:08:26.739,0:08:30.550
part of you should be able to tell me
that the next time we're going to look at

0:08:30.550,0:08:34.599
is the hip joint and the hip joint
obviously as you probably know from lab

0:08:34.599,0:08:38.529
has to bear quite a bit of weight of the
body just a quick review of the

0:08:38.529,0:08:41.919
structural features of this these are
characteristic of the synovial joint

0:08:41.919,0:08:46.209

once again we have a joint cavity we
have the articular cartilage we have the

0:08:46.209,0:08:50.079
synovial membrane secreting synovial
fluid and finally we have the joint

0:08:50.079,0:08:54.370
capsule around here so we have all the
typical characteristics of the synovial

0:08:54.370,0:08:57.199
joint that we
about before one of the things to take

0:08:57.199,0:09:01.999
note is how different this is from the
structure of the shoulder and one of the

0:09:01.999,0:09:06.139
things you'll notice is that this very
deep cup which is in the hip bone here

0:09:06.139,0:09:11.480
is the acetabulum hopefully you remember
that from lab and the head of the femur

0:09:11.480,0:09:16.189
fits pretty snugly in the acetabulum and
because this cup is a little bit deeper

0:09:16.189,0:09:20.569
than the glenoid fossa or glenoid cavity
that we looked at in the shoulder the

0:09:20.569,0:09:25.100
hip joint is a lot more stable however
there's always a trade-off it's more

0:09:25.100,0:09:29.389
stable but it has a little bit less
freedom of movement which is okay

0:09:29.389,0:09:32.720
because we don't need the hip to move in
as many different directions as we would

0:09:32.720,0:09:36.470
need the shoulder to move so having it
be more stable is much more important

0:09:36.470,0:09:39.949
because it's supporting much of the
weight of the body over it the other

0:09:39.949,0:09:43.189
thing that we have here and we're going
to talk about this in a second is notice

0:09:43.189,0:09:47.269
this right here there's a ligament that
goes into the head of the femur and this

0:09:47.269,0:09:51.559
is called the ligamentum capitis this is
another reinforcing structure that holds

0:09:51.559,0:09:54.980
the head of the femur into the
acetabulum and there are actually some

0:09:54.980,0:09:59.600
blood vessels in here that nourish the
head of the femur this hole in the head

0:09:59.600,0:10:03.019
of the femur is known as the fovea
capitis and as we said the ligament is

0:10:03.019,0:10:07.399
called the ligamentum capitis sometimes
called the teres ligament now if we

0:10:07.399,0:10:10.220
look at some of the reinforcing
structures around the hip you'll see

0:10:10.220,0:10:14.629
that I have boxed in red three major
ligaments that I want you to know one is

0:10:14.629,0:10:19.610
called the pubofemoral the other is
the iliofemoral the other is the ischiofemoral

0:10:19.610,0:10:24.290
easy-to-remember if you remember
that the hip is made up of three bones

0:10:24.290,0:10:30.100
so each coxa or hip is made up of three
bones the pubis ilium and ischium and

0:10:30.100,0:10:36.019
each of those bones has a ligament going
from it to the femur so hence we have

0:10:36.019,0:10:40.519

pubofemoral iliofemoral and ischiofemoral
and if you look on the right

0:10:40.519,0:10:45.589
side you'll notice that we have a labrum
just like we did in the shoulder this is

0:10:45.589,0:10:50.149
a layer or ring of fibrocartilage once
again that deepens the acetabulum just a

0:10:50.149,0:10:54.350
bit so the head of the femur is even
more solidly held within this joint and

0:10:54.350,0:10:59.360
this is called the labrum once again
remember labrum is a lip so this is a

0:10:59.360,0:11:04.759
lip of fibrocartilage that reinforces
the hip joint now the last joint we're

0:11:04.759,0:11:08.750
going to take a look at is the knee
joint this is called the tibiofemoral

0:11:08.750,0:11:13.639
joint now notice that this name doesn't
include anything about the fibula and as

0:11:13.639,0:11:17.629
you hopefully learned from lab remember
that the fibula is not a weight-bearing

0:11:17.629,0:11:23.120
bone so what we're talking about in this
joint is really just the joint between

0:11:23.120,0:11:29.300
the femur and the tibia so hence we call
this the tibial femoral joint once again

0:11:29.300,0:11:33.980
all the characteristics of a synovial
joint the cavity the articular cartilage

0:11:33.980,0:11:39.500
synovial membrane synovial fluid and
then of course a joint capsule and we're

0:11:39.500,0:11:43.310
going to look at in a second a bunch of
reinforcing structures around the knee

0:11:43.310,0:11:48.170
if you think about what the knee has to
do it has to even hold more weight than

0:11:48.170,0:11:52.149
the hip does because there's the weight
of the legs or the thighs above it and

0:11:52.149,0:11:56.720
in addition to that we ask you to do a
number of crazy things when we're

0:11:56.720,0:12:02.540
running we're twisting at the same time
just running itself creates a lot more

0:12:02.540,0:12:09.470
force on the joint than walking for
example so we twist we turn we run so

0:12:09.470,0:12:13.009
this joint has to bear quite a bit of
weight and not only that it has to take

0:12:13.009,0:12:17.779
quite a bit of wear and tear for what we
asked you to do in fact so much that it

0:12:17.779,0:12:22.009
surprises me that there aren't more knee
injuries than they really are and the

0:12:22.009,0:12:25.370
injuries are pretty common but I'm very
surprised that there aren't more in

0:12:25.370,0:12:28.790
light of what we really asked it to do
the other thing you'll see here I'm just

0:12:28.790,0:12:32.779
going to mention is that we also have a
patellofemoral joint and so the patella

0:12:32.779,0:12:36.740
is right here and you notice the joint
between the femur and the patella this

0:12:36.740,0:12:41.449
is called the patellofemoral joint this
is a sliding joint so as we flex and

0:12:41.449,0:12:46.370

extend the knee the patella basically
goes up against the patellar surface of

0:12:46.370,0:12:50.240
the femur so this is kind of a gliding
joint so let's take a little closer look

0:12:50.240,0:12:54.050
at some of the structures inside this
joint you'll notice that this has a

0:12:54.050,0:12:56.899
couple of additional structures that
we're going to look at in more detail in

0:12:56.899,0:13:01.339
a second these are called menisci one
of these is called a meniscus the -us

0:13:01.339,0:13:04.670
is singular in Latin the -i is plural
and we're going to see that we have a

0:13:04.670,0:13:10.220
medial and lateral meniscus these are
actually fibrocartilaginous cups similar

0:13:10.220,0:13:14.029
to the labrum that we looked at before
and what these do is they deepen the

0:13:14.029,0:13:18.230
tibial plateaus, those depressions that
are on top of the tibia with a femoral

0:13:18.230,0:13:21.949
condyle sit I'm going to show you
this in a second and these once again

0:13:21.949,0:13:25.399
are called menisci now if we look at the

0:13:25.399,0:13:29.420
knee joint from the front you can see
the patella obviously and you can see

0:13:29.420,0:13:33.500
that I have boxed in read three specific
structures that I want you to know so

0:13:33.500,0:13:38.600
there's a fibular collateral ligament on
the side so on the fibular side there's

0:13:38.600,0:13:42.680
the patella ligament which actually
comes from the quadriceps tendon so the

0:13:42.680,0:13:46.640
tendon of the quadriceps muscles exerts
its action through the patella the

0:13:46.640,0:13:51.050
patella is inserted in turn onto the
tibia right at this raised point here

0:13:51.050,0:13:54.320
hopefully you remember what that is from
lab that's called the tibial tuberosity

0:13:54.320,0:13:59.750
and we also have the tibial collateral
ligament which is on the medial side of

0:13:59.750,0:14:04.700
the joint so these three ligaments that
are boxed in red are important for you

0:14:04.700,0:14:07.100
to know in the sense that these are
important that you know that they're

0:14:07.100,0:14:11.120
part of the knee joint by the names of
these it's kind of obvious right you'll

0:14:11.120,0:14:15.500
also see that we have a couple of things
called patellar retinacula these are

0:14:15.500,0:14:19.820
basically additional layers of
connective tissue around the side of the

0:14:19.820,0:14:23.899
joint that helps to stabilize the
patella and stabilize the knee joint in

0:14:23.899,0:14:27.950
general so let's take a couple of
different views of the knee joint this

0:14:27.950,0:14:32.120
is as you look in the lower left hand
corner you'll see that this is a deep

0:14:32.120,0:14:36.560
posterior view of the extended knee in

other words the leg is straight it's not

0:14:36.560,0:14:41.660
bent so here we can see the condyles of
the femur and remember these are much

0:14:41.660,0:14:45.709
more easily visualized from the back
than from the front and here we have

0:14:45.709,0:14:51.589
those very shallow tibial plateaus now
these resting on the tibial plateau is

0:14:51.589,0:14:56.570
without anything in addition would tend
to slide a little bit more but notice

0:14:56.570,0:15:01.190
the addition of the menisci that we have
here we have a medial meniscus and we

0:15:01.190,0:15:05.839
also have a lateral meniscus these once
again are fibrocartilaginous cups into

0:15:05.839,0:15:11.240
which the condyles basically fit and sit
and stabilize the joint inside this

0:15:11.240,0:15:14.959
joint we have a couple of additional
ligaments that I want you to know one is

0:15:14.959,0:15:18.589
called the anterior cruciate the other
is called the posterior cruciate

0:15:18.589,0:15:23.779
ligament now they're called cruciate
because they cross over one another the

0:15:23.779,0:15:28.670
way to differentiate the anterior from
the posterior is to think of whether it

0:15:28.670,0:15:33.320
inserts on the anterior or posterior of
the tibia you'll notice that we're

0:15:33.320,0:15:36.259
looking at a posterior view and notice
this ligament

0:15:36.259,0:15:40.910
that inserts on the posterior of the
tibia is the posterior cruciate ligament

0:15:40.910,0:15:45.169
the anterior cruciate ligament as we'll
see in a second inserts on the front of

0:15:45.169,0:15:49.970
the tibia so this is why they're named
anterior and posterior another thing I

0:15:49.970,0:15:55.009
want you to look at is the view on the
right here and that is the menisci this

0:15:55.009,0:15:58.970
is a lateral meniscus here this is a
medial meniscus and you'll see that the

0:15:58.970,0:16:04.309
menisci in the knee are basically
c-shaped pieces of fibrocartilage so each

0:16:04.309,0:16:08.299
meniscus is crescent like and
sometimes when these are torn in

0:16:08.299,0:16:12.619
athletes if we were to have a tear
through one of these menisci this might

0:16:12.619,0:16:17.029
be called a bucket handle tear a lot of
orthopedists refer to this like this

0:16:17.029,0:16:20.929
because it looks kind of like the handle
of a bucket but once again the purpose

0:16:20.929,0:16:25.999
of these is to stabilize the femoral
condyles on top of the tibia and here

0:16:25.999,0:16:29.119
you can see once again the anterior
cruciate ligament and the posterior

0:16:29.119,0:16:32.919
cruciate ligament you can get a better
view of where they insert on the tibia

0:16:32.919,0:16:37.639
looking at another view here you can see

that this is a deep anterior view of the

0:16:37.639,0:16:43.009
flexed knee so the knee is flexed or
bent and here we can see the condyles of

0:16:43.009,0:16:46.789
the femur once again here we can see
these very shallow tibial plateau that

0:16:46.789,0:16:53.449
are deepened by the menisci the medial
meniscus and the lateral meniscus just a

0:16:53.449,0:16:57.499
couple of things I want to mention about
lifespan changes joint stiffness is an

0:16:57.499,0:17:02.449
early sign of aging many of us get a
condition called osteoarthritis you may

0:17:02.449,0:17:06.829
have heard the term wear and tear
arthritis this is basically from using

0:17:06.829,0:17:10.879
our joints and of course regular
exercise can tremendously helped to

0:17:10.879,0:17:16.279
prevent stiffness there are changes in
some of the joints in the body so for

0:17:16.279,0:17:20.299
example the intervertebral discs which
remember have on the outside

0:17:20.299,0:17:26.089
fibrocartilage these basically diminish
flexibility and they also decrease in

0:17:26.089,0:17:31.010
height because the water is lost as we
age and then the synovial joints also

0:17:31.010,0:17:34.760
lose some of their elasticity which
makes them a little bit easier to injure

0:17:34.760,0:17:38.120
just a couple of terms that I want to
introduce here so that you will have

0:17:38.120,0:17:42.289
heard them you see that sprains and
strains are something that's different

0:17:42.289,0:17:46.220
sprains usually are damage to
ligaments whereas strains are typically

0:17:46.220,0:17:49.970
damage to muscles or tendons two terms
that you should know

0:17:49.970,0:17:53.900
from the previous things we've talked
about is that bursitis as I mentioned

0:17:53.900,0:17:58.520
earlier is inflammation of a bursa we
can see the -itis appended to the root

0:17:58.520,0:18:03.169
and then arthritis is inflammation of a
joint we have a couple of different

0:18:03.169,0:18:06.679
kinds of arthritis one is called
rheumatoid arthritis the other that I

0:18:06.679,0:18:10.010
mentioned previously is called
osteoarthritis the wear and tear

0:18:10.010,0:18:13.789
arthritis and then we also have gouty
arthritis which is caused by elevation

0:18:13.789,0:18:18.679
of uric acid crystals that get deposited
in joints some people have a genetic

0:18:18.679,0:18:23.900
predisposition depending on their diet
alcohol intake to develop these uric

0:18:23.900,0:18:28.190
acid crystals very very painful disorder
when these crystals deposit in some of

0:18:28.190,0:18:31.970
the larger joints in the body one of the
last things I want to show you here is

0:18:31.970,0:18:35.809
about rheumatoid arthritis this is

actually a type of arthritis that's an

0:18:35.809,0:18:41.240
autoimmune attack on somebody's own joints in other words their immune

0:18:41.240,0:18:46.220
system attacks their own body this is a particularly debilitating form of

0:18:46.220,0:18:49.370
arthritis and one of the things I want you to notice is in the image on the

0:18:49.370,0:18:53.780
right you can see that the bones and the joints have actually shifted to the

0:18:53.780,0:18:57.289
point where the hands are essentially useless and there's really no way to

0:18:57.289,0:19:02.330
stop this but it can be slowed down a bit by certain medications and on the

0:19:02.330,0:19:05.840
left side you can see some of these common elements that you see on the

0:19:05.840,0:19:09.770
outside of somebody with rheumatoid arthritis these kind of tophi these

0:19:09.770,0:19:15.110
large deposits of inflamed tissue that's around the joints okay so that will do

0:19:15.110,0:19:19.909
it for our quick tour of the joints in the body I hope you enjoyed it remember

0:19:19.909,0:19:23.570
the main thing that I want you to know from this lecture is all those things

0:19:23.570,0:19:28.130
that you saw in red on the slides and these include the boxed elements as well

0:19:28.130,0:19:31.490
as the different names of the joints that are more anatomical than the common

0:19:31.490,0:19:35.320
names okay I'll see you soon