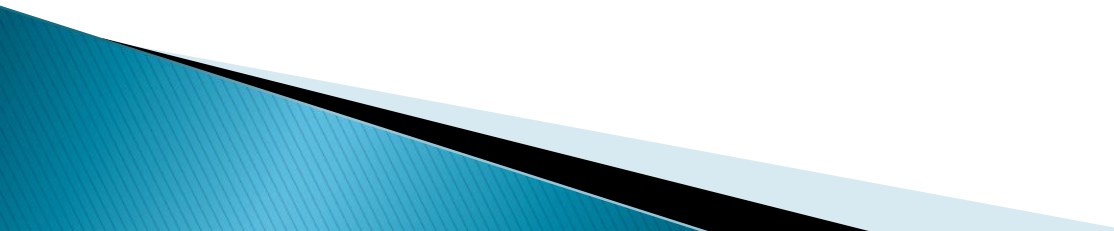



# Lupus: Common Tests & Interpreting the Results

KNOWING WHEN ACTION IS  
REQUIRED

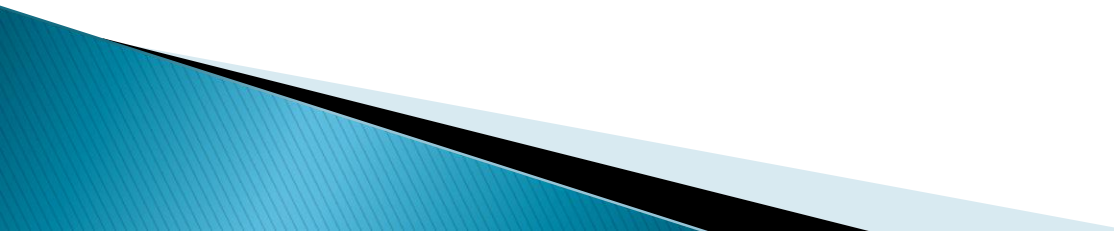
# What you will learn in this presentation

- ▶ Common tests done for monitoring lupus.
  - ▶ Different ways to interpret results
  - ▶ What is the significance of an abnormal result
- 

# General information you need to know

- ▶ Abnormal does not necessarily mean abnormal for you
  - ▶ Often times, what is more significant than results being within “normal” range is how they look in comparison to your own previous results.
  - ▶ Lab values need not be normal to represent a good or improving state of health for you.
- 

# HOW TO LOOK AT YOUR RESULTS

- ▶ TYPE OF TEST
  - ▶ WHAT IS THE TEST FOR
  - ▶ NORMAL RANGE
  - ▶ INTERPRETING THE RESULT
- 

# WHITE BLOOD CELL COUNT (WBC)

What is it for:

This test is done to measure the number of white blood cells in your body. White blood cells are responsible for fighting infection.

Normal range:

4.0–11.0 XE9/L

How to interpret the results:

- ▶ lower numbers (leucopenia) may be a sign of
  - viral infection,
  - active lupus
  - may be caused by some medications
  
- higher numbers may be a sign of infection,
- corticosteroid therapy

# Hemoglobin

- ▶ What is it for :

This test detects hemoglobin, HGB is a protein in red blood cells that helps carry oxygen throughout the body

Normal range:

120–160 G/L

How to interpret the results:

Hemoglobin levels lower than normal indicate a low number of red blood cells (anemia)

# Platelets

- ▶ **What are they for:**  
This test measures the number of platelets in the blood
- ▶ Platelets help the blood clot.
- ▶ Normal range: 150–400×E9/L
- ▶ How to interpret the results:  
low platelet levels are referred to as Thrombocytopenia and means you are more susceptible to easy bleeding and bruising

# Creatinine

- ▶ What is it for:

This test can be used to measure kidney function. Creatinine is a waste product of your muscle metabolism, present in the blood, that is usually removed by healthy kidneys.

- ▶ Normal range: 45–97  $\mu\text{mol/L}$

- ▶ How to interpret the results:

A high creatinine level means the kidneys aren't working well

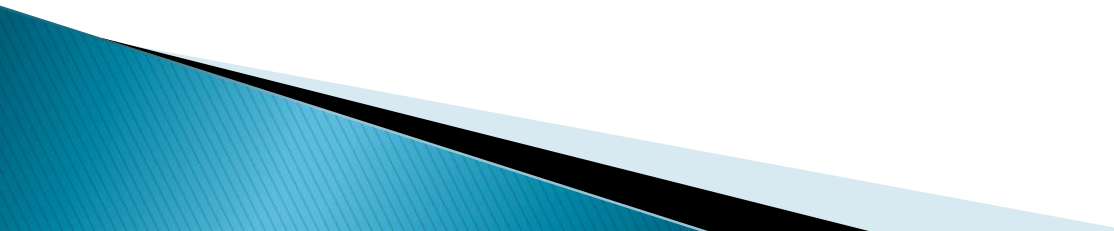


# Liver Function tests (LFTs): AST, ALT, ALP

- ▶ What are these tests for:
- ▶ These tests can measure liver damage, which can cause enzymes from liver cells to leak into the blood.
- ▶ Normal range:
  - AST 7–31 U/L
  - ALT 10–44 U/L
  - ALP up to 150 U/L
  - How to interpret the result:

People with lupus often have high levels of these enzymes. Usually doctors are not concerned unless the results are 3 times higher than normal – levels higher than this may indicate liver damage

# CHOLESTEROL

- ▶ What is cholesterol?
  - ▶ Cholesterol, is a substance produced by the liver, is needed to make vitamin D and some hormones, build cell walls, and create bile salts that help you digest fat.
  - ▶ Too much of certain types of cholesterol contribute to heart disease
- 

# HOW DO WE INTERPRET CHOLESTEROL

- ▶ Low Density Lipids (LDL)

This test measures “lousy” cholesterol, levels between 2–3mmol/L are considered ideal

LDL is a major risk for heart disease so in general the lower the LDL the lower the risk

- ▶ High Density Lipids (HDL)

This tests measures “healthy” cholesterol,

For women 1.3–1.5 mmol/L are ideal

For men 1.0–1.5 mmol/L are ideal

# HOW DO WE INTERPRET CHOLESTEROL continued

## ▶ Non HDL-C

### ◦ What is Non HDL-C Cholesterol

This measurement tells you all the bad cholesterol circulating in your body

### ◦ How do we measure Non HDL-C Cholesterol

Non HDL-C is measured by subtracting the “healthy” HDL from the total cholesterol,

### ◦ Non HDL-C is now used as an alternative target along with LDL

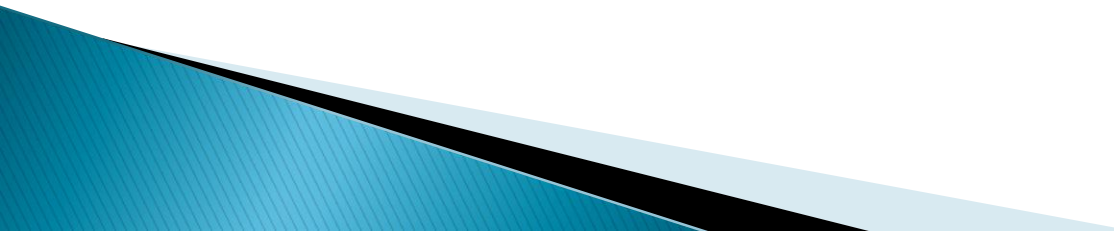
# HOW DO WE INTERPRET CHOLESTEROL continued

- ▶ How do interpret Non HDL-C (no fasting required)
- ▶ Non HDL-C higher than 4.3 mmol/L identifies patients at increased risk for heart disease and may require medication to lower cholesterol
- ▶ Triglycerides  
This test measures another type of fat in the blood  
Simple sugars and alcohol may contribute to increased triglycerides  
Triglyceride levels over 1.7 mmol/L is considered abnormal

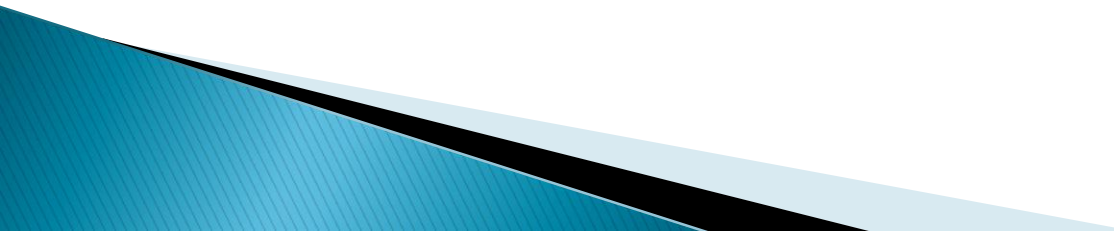
# C3 and C4

- ▶ What are these tests
  - These tests measure inflammation
  - A decrease in these values may be associated with an increase in activity in disease however not every person with lupus shows this response, some may always be low and it is not mean that their lupus is flaring
- Values for C3 0.9–1.8 g/l
- Values for C4 0.1–0.4 g/l

# Anti-dsDNA

- ▶ This test is used to monitor lupus disease activity
  - ▶ Increased Anti-dsDNA can be seen prior to and during lupus flares
  - ▶ Not all patients exhibit this increase during lupus flares
- 

# ANA

- ▶ This test looks for the presence of antibodies
  - ▶ Testing positive for this test does not mean you have lupus as many persons without lupus may test positive
  - ▶ A negative tests indicates that you do not have lupus
- 



# Urinalysis

- ▶ Urine is a waste product that is produced by your kidneys
- ▶ The following components are looked at in a routine urinalysis
  - Protein
    - Higher levels of protein may indicate kidney disease, high blood pressure or diabetes
    - Generally if protein is found to be high on a urinalysis the doctor will ask for a 24 hour urine collection
  - Glucose
    - to much glucose may be caused by diabetes, you will generally be asked to do a blood test to see what your blood sugar level is
  - Red blood cells, white blood cells, casts
    - Higher levels of red blood cells may indicate may indicate kidney problems, if your doctor is concerned he will ask for more tests

# 24 hour urine

- ▶ This test measures the amount of protein that is excreted by your kidneys
- ▶ Interpreting results
  - greater than .30–.50g per day is considered to be abnormal (proteinuria)
- ▶ When interpreting results it is important that you look at your previous results as improvement in proteinuria is what your physician is looking for