

The Auscultatory Percussion of the Stomach Plays a Central Role in Bedside Diagnosis and Primary Prevention of Neurodegenerative Diseases and their Inherited Real Risks

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International Society of Quantum Biophysical Semeiotics, Italy

This talk is about:

1. ... a new bedside diagnostic technique which is called Biophysical Semeiotics ...

2. ... and how, in our preliminary experience, Biophysical Semeiotics allows early diagnosis and timely treatment of patients affected by heart and brain disorders

The clinical data which will be presented during this Meeting have been collected as case series observational study by:

Dr Sergio Stagnaro, MD, Consultant in Gastroenterology and Internal Medicine

and

Dr Mario Siniscalchi, MD, PhD, Consultant Cardiologist

Up to now,

Biophysical Semeiotics is

“ Evidence Based Medicine “ Level IV

However we believe that the data gained from our preliminary experience have the potential of attracting physicians and scientists who may be interested in bringing their own experience, skills and competence in order to validate (or falsify) our preliminary results.

In addition to that:

1. the economical cost of Biophysical Semeiotics is minimal therefore NO EXTRA COSTS are to be added
2. the length of time required to the trained physician in order to correctly apply Biophysical Semeiotics is very short, therefore this novel technique can be safely implemented even by the busy clinicians during their daily clinical duties.

What is Biophysical Semeiotics ?

- It is an extension of classical, bedside, medical semeiotics based on the use of the stethoscope
- It stems from the integration of non linear mathematical models and chaos theory with biological systems
- It allows physicians to detect and recognize specific body signals, in order to assess the normal or abnormal functions of different organs and systems, therefore allowing early diagnosis and timely treatment

Auscultatory Percussion

The foundation of Biophysical Semeiotics is the **simultaneous** application of two pillars of classical medical semeiotics:



1. Auscultation

2. Percussion



LEOPOLDI AUENBRUGGER

MEDICINÆ DOCTORIS
IN CÆSAREO REGIO NOSOCOMIO NATIONUM
HISPANICO MEDICI ORDINARIÏ.

INVENTUM NOVUM

EX

PERCUSSIONE THORACIS HUMANI
UT SIGNO

ABSTRUSOS INTERNI
PECTORIS MORBOS
DETEGENDI.



VINDOBONÆ,

TYPIS JOANNIS THOMÆ TRATTNER, CÆS. REG.
MAJEST. AULÆ TYPOGRAPHI.

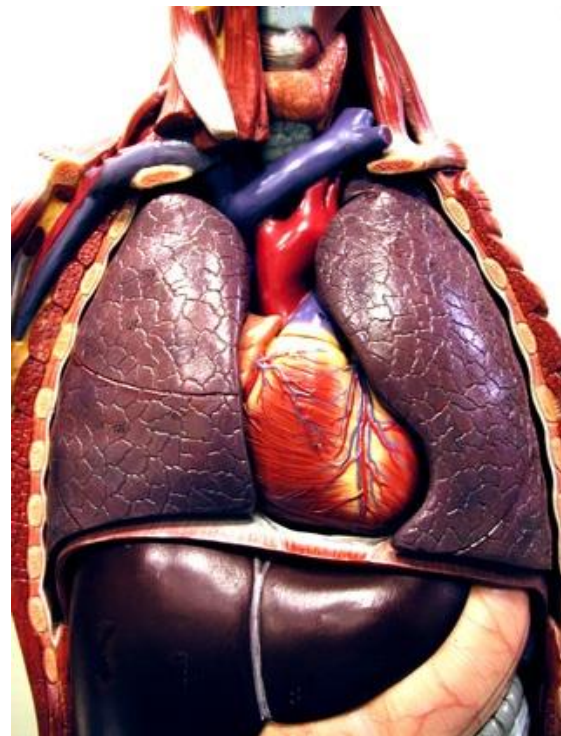
MDCCLXI.

Auscultatory Percussion

During Auscultatory Percussion, striking a surface which covers an air-filled structure (e.g. normal lung, stomach) will produce a resonant note while repeating the same test over a fluid or tissue filled cavity generates a relatively dull sound.

During classical, bedside examination of the patient, the Auscultatory Percussion allows the physician to collect two different kind information:

Topographical Pathology
Anatomy



- In medical literature, different authors have highlighted
- the ***usefulness of auscultatory percussion***
- in order to detect and make bedside diagnosis of a number of disorders such as:
- pleural effusion, neoplastic chest disorders, heart diseases, obstructive uropathy, misdiagnosed fractures or subdural and extradural haematomas.

British Medical Journal 1982

BRITISH MEDICAL JOURNAL VOLUME 284 10 APRIL 1982

Auscultatory percussion of the head

PAPERS

JOHN R GUARINO

Abstract

Eighty-nine consecutive patients with suspected intracranial masses were examined by auscultatory percussion in a blind study to assess the sensitivity of the procedure. Each patient underwent computed tomography (CT) of the brain as part of his medical care, and the results were compared with those of auscultatory percussion. Fifty-one of the patients had abnormal CT scans, of whom 44 (86%) had abnormal (positive) findings on auscultatory percussion; seven (13%) yielded false-negative results. Each of the patients with subdural haematomas had distinctly positive findings by auscultatory percussion. Of the 38 patients with normal CT scans, 11 had strokes with hemiparesis, and each had positive findings in the contralateral hemisphere by auscultatory percussion. The remaining 27 patients with normal CT scans were healthy; 25 had normal findings on auscultatory percussion, two (7%) gave false-positive results. Twenty subjects were studied with phonoscopy.

Auscultatory percussion is easy to perform and is

Eur Respir J 1995

Eur Respir J, 1995, 8, 1756–1760
DOI: 10.1183/09031936.95.08101756
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SERIES 'CHEST PHYSICAL EXAMINATION'
Edited by J.C. Yernault

Chest percussion

J.C. Yernault*, A.B. Bohadana**

Chest percussion in health and disease

A full description of the acoustic characteristics of chest percussion assessed by subjective means is available in excellent textbooks [23, 24], and will not be attempted here. However, a clinically relevant aspect

Chest, 1994

Rapid Clinical Diagnosis of Pulmonary Abnormalities in HIV-Seropositive Patients by Auscultatory Percussion*

*Roscoe S. Nelson, M.D.; Leland S. Rickman, M.D.;
W. Christopher Mathews, M.D.; Stephen C. Beeson, M.D.; and
Steven C. Fullerton, M.P.H.*

A prospective, blinded study of pulmonary findings in hospitalized patients with HIV infection compared auscultatory percussion (AusP) with conventional percussion (ConP) and conventional auscultation (ConA) using chest radiographs as the gold standard. Sixty-three patients had chest radiographs and were examined by one to three examiners. Seventy of the 126 lungs had radiographic abnormalities (55.6 percent). Auscultatory percussion proved to be the most sensitive of all techniques for each examiner (range, 51.0 to 69.6 percent) for detecting radiographic abnormalities and also had higher likelihood ratios for two of the three examiners; AusP also had the highest likelihood ratio pooled across examiners. Of the 166 abnormal results of lung examinations, the combination of AusP and ConA

detected 31 more abnormalities than ConP and ConA combined, with 14 of these being diagnosed with *Pneumocystis carinii* pneumonia. No abnormalities were detected by ConP that were not detected by AusP. These findings suggest that AusP, a rapid clinical maneuver, is more sensitive and specific than ConA and ConP in determining pulmonary abnormalities in HIV-infected inpatients.

(Chest 1994 105: 402-07)

**AusP = auscultatory percussion; Bil = bilateral;
ConA = conventional auscultation; ConP = conventional
percussion; Infil = infiltrate; LE = lung examination;
LL = lower lobe; ML = middle lobe; PCP = *Pneumocystis
carinii* pneumonia; ROC = receiver operator characteristic;
SS = silver stain; UL = upper lobe**

Use of Percussion as a Screening Tool in the Diagnosis of Occult Hip Fractures

Mohan Tiru, S H Goh, B Y Low

ABSTRACT

Traumatic hip pain is a common clinical problem in the emergency department. There is significant morbidity in discharging a patient with an undiagnosed undisplaced hip fracture. The auscultatory percussion technique is a useful method to risk stratify patients who present with traumatic hip pain and with normal radiographs. We sought to study the sensitivity and specificity of the auscultatory percussion technique in a prospective study.

International Journal of Clinical Practice, 2003

Apr;57(3):204-9.

Auscultatory percussion: an added dimension in physical diagnosis.

Brunk SF.

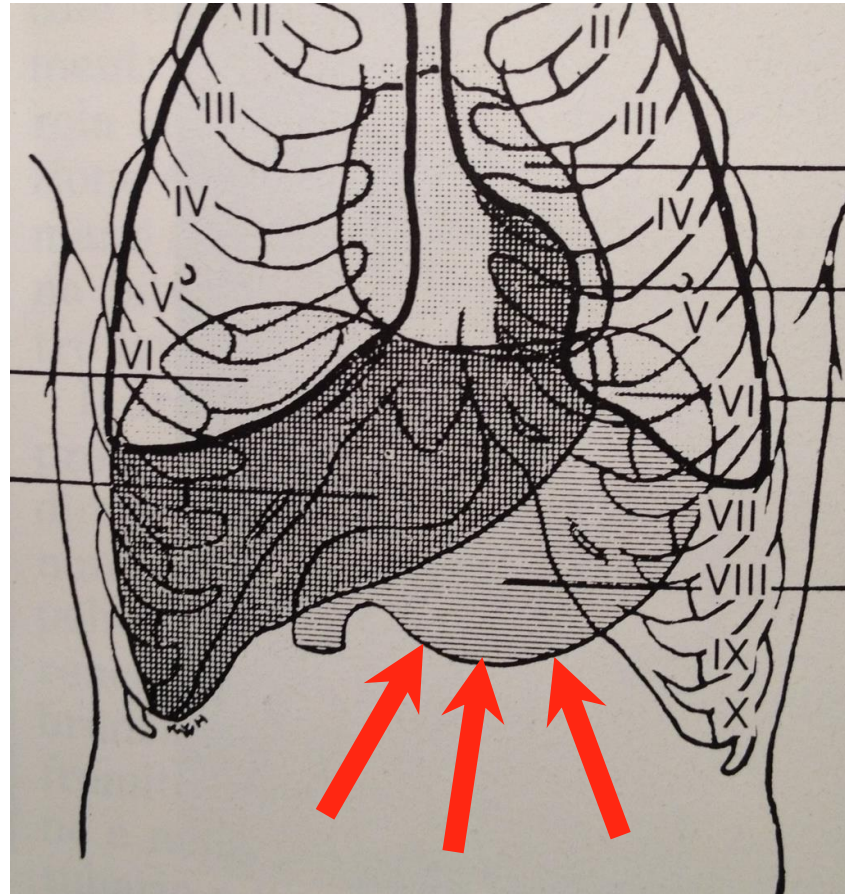
Source

Cancer Treatment Centers of America, Southwestern Regional Medical Center, Tulsa, Oklahoma 74137, USA.

Abstract

The combination of both auscultation and percussion in the diagnostic examination improves both auscultation and percussion and, in so doing, increases the skill of palpation. Auscultatory percussion (AP) is easy to learn, easy to use and requires little time to perform. The size of normal organs and the size of abnormal masses as determined by AP are usually similar to measurements determined by X-rays and CT scans. Abnormalities found by AP need to be evaluated and confirmed by other diagnostic procedures. AP brings increased precision to physical diagnosis and is felt to be a valuable addition to medical practice.

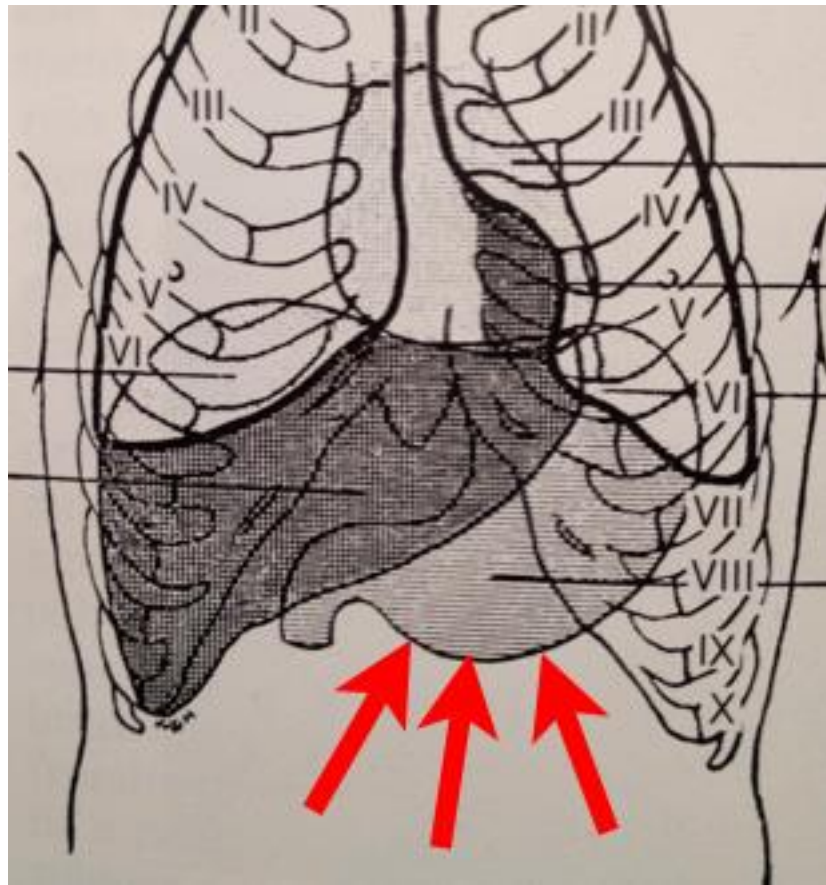
Identification of the Greater Curvature of the Stomach using Auscultatory Percussion



Essential requisites:

- 1) Patient must be in a supine position*
- 2) Patient must be collaborative*





The stethoscope is placed on the skin projection area of the stomach:

on the xiphoid umbilical line:



2-3 cm below the ensiform process of the sternum, 1-2 cm to the left:

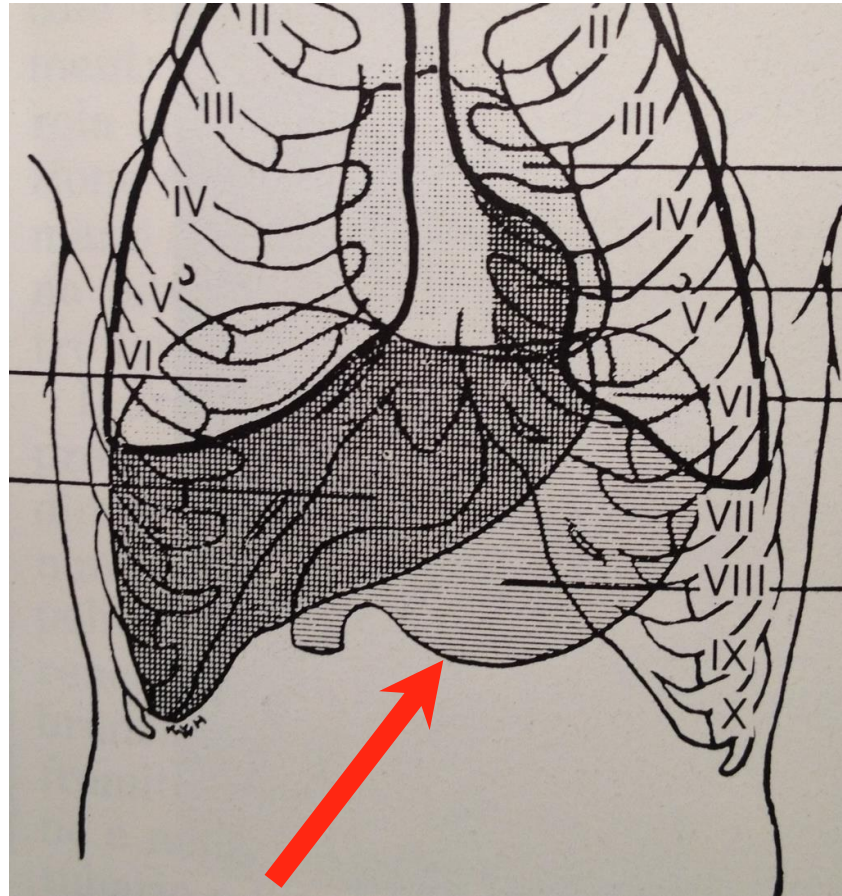


The patient is asked to support the stethoscope with a light touch, so as to ensure complete adhesion of the stethoscope to the skin:



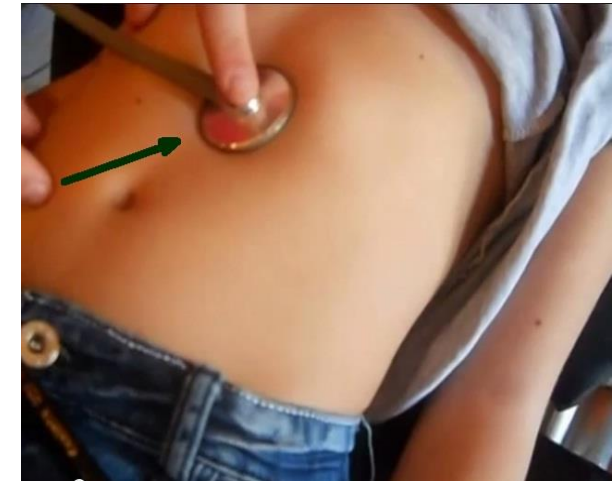
The percussion is then performed with the middle finger, bent as a hammer, directly, smoothly and gently on the skin.

The percussions must be very light, with the equal force you would apply when playing with a 1 week old-baby beating on his/her forehead

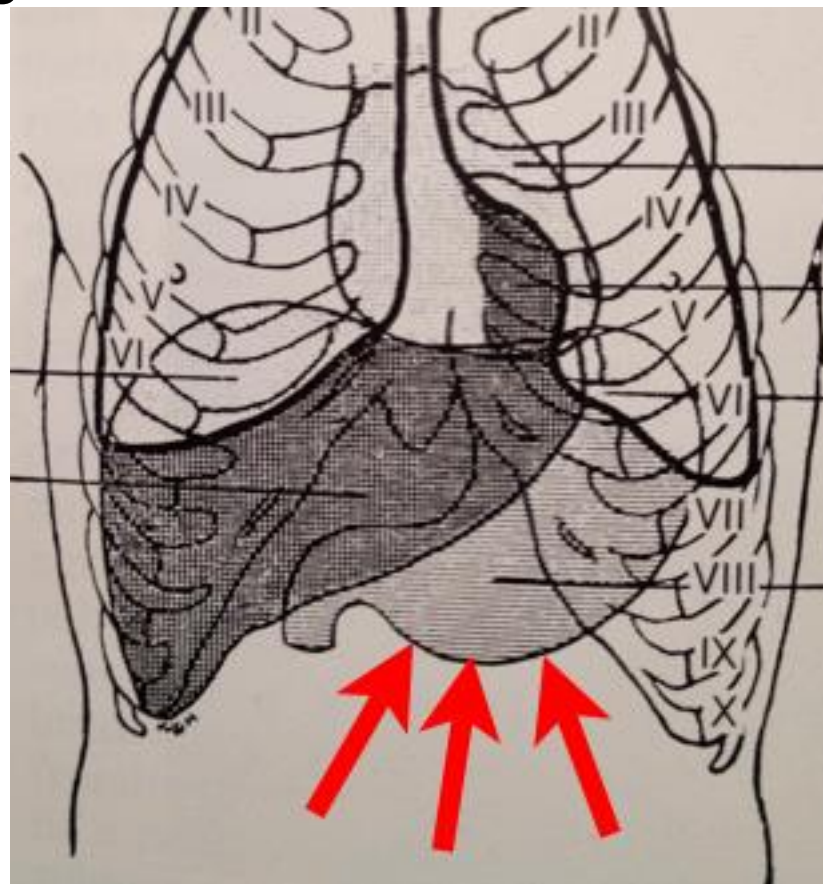


The **arrow** marks the direction to be followed during finger-percussion: from lateral towards the umbilicus.

all the points of the green line must be assessed ie you have to maintain a spatial continuity in your percussion (no more than 0.5 - 1 cm between one dot and the other one !)

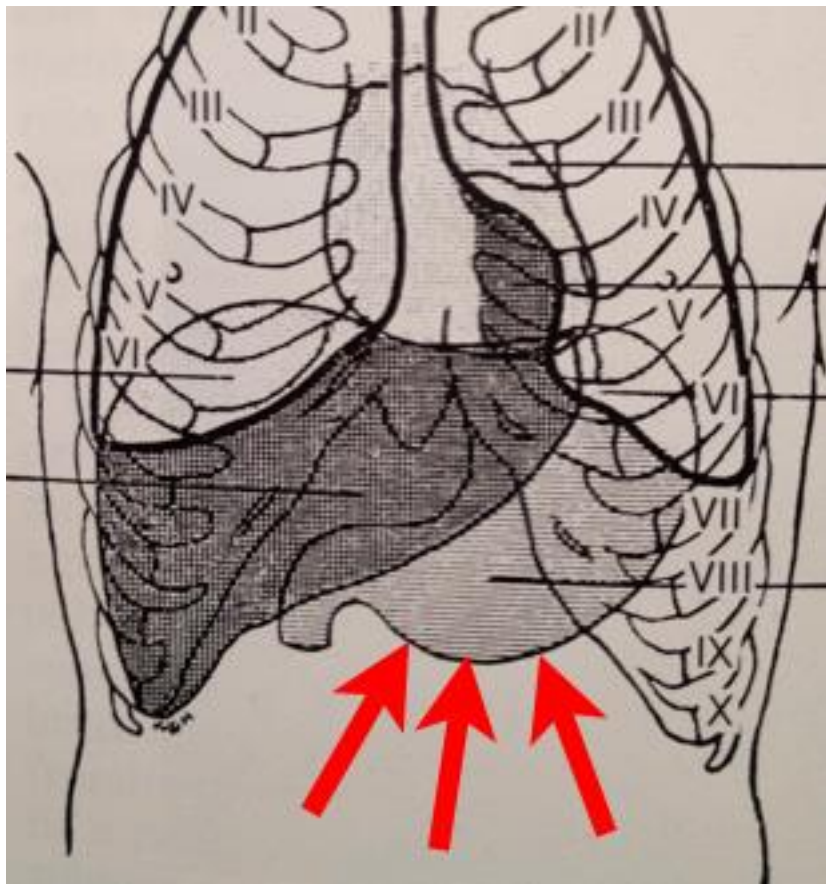


When the percussion beats "directly" on the skin projection of the stomach the sound of percussion is perceived clearly modified: stronger, more clear, intense, and hyperfonetic : then on the point in which the sound changes a black dot is drawn



The procedure is repeated until at least five points in which the sound changes are visually identified on the skin surface

All the points are then connected with a line, therefore obtaining the skin projection of the greater curvature of the stomach.



The previous steps are the basic steps for the Auscultatory Percussion of the greater curvature of the stomach and their underlying principle and technique can also be applied in order to identify the skin projections of other organs (heart, lungs) or to bedside assess pathological conditions (pleural effusion, dilated cardiomyopathy).

Therefore, in classical medical semeiotics, Auscultatory Percussion is a static technique useful for clinical anatomy and medical diagnosis.

The intuition of Dr Sergio Stagnaro, MD (Consultant in Gastroenterology and Internal Medicine) was that, during Auscultatory Percussion, the greater curvature of the stomach

does move (dilatation and/or contraction) and does show highly precise reflex patterns which can be appreciated and defined in terms of duration (seconds) and intensity (cm)

when a pressure stimulus is applied on the skin projection of a different organ (for example, the heart, or the brain).

Following the application of the pressure stimulus to the skin projection of an organ (heart, brain)

during the Auscultatory Percussion of the greater curvature of the Stomach,

a dynamic relationship

between

two different biological systems (Heart-Stomach, or Brain-Stomach)

is created:

the Auscultatory Percussion is not anymore a static technique but a dynamic one

and has been defined by Dr Stagnaro

“ Reflex Diagnostic Auscultatory Percussion ”.



1. ... once the greater curvature of the stomach is identified ...

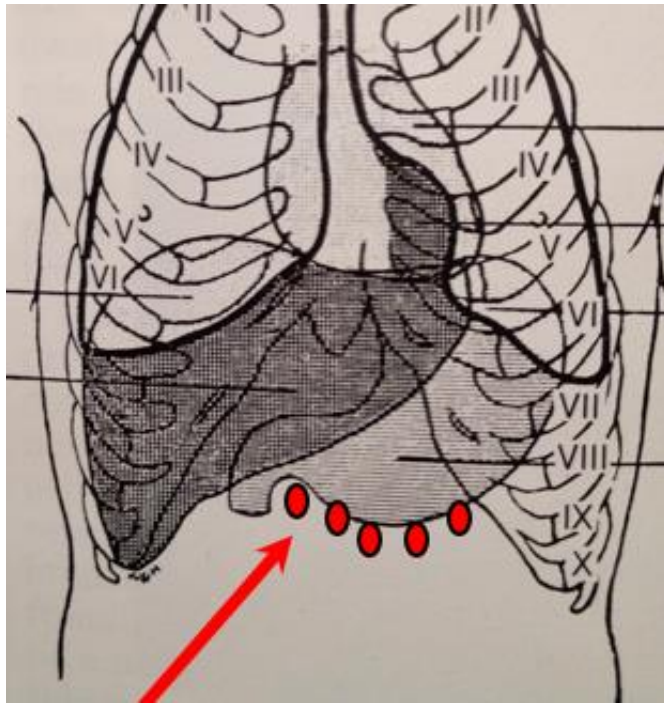


2. ... the physician with one hand performs the percussion just immediately before the skin projection of the stomach ...



3. ... and at the very same time, with the other hand, is applying the pressure stimulus on the skin projection of the organ to be assessed (heart in this example)

The Auscultatory Percussion just immediately before the skin projection of the stomach is essential in order to to verify:



IF
WHEN
FOR HOW LONG
and HOW MUCH



the stomach dilates or contracts as a consequence of the interaction between the stomach and the organ to be evaluated (the heart in this example).

All the data presented come from a case series observational study run by Dr S Stagnaro, MD, Consultant in Gastroenterology and Internal Medicine

When : between 1982 and 2012

Where : in a single - Consultant run private practice

Inclusion criteria

1. Patients presenting for the first time with aspecific cardiological or neurological symptoms.
2. Negative objective findings during the clinical examination
3. Negative laboratory / radiological investigations related to cardiological or neurological disorders

Exclusion criteria:

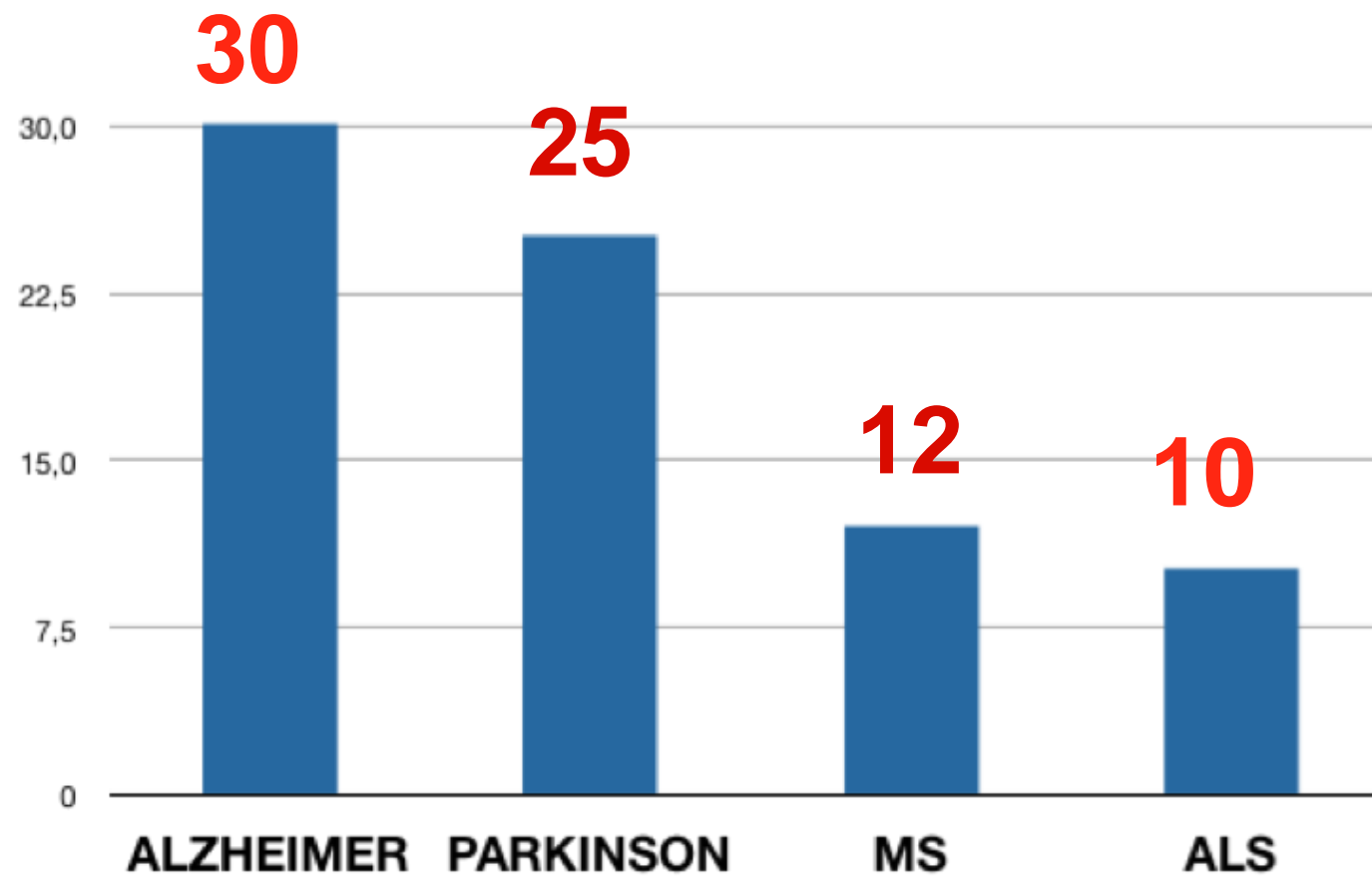
1. Patients with an already established or diagnosed brain or heart disorder
2. Patients presenting with positive objective cardiological or neurological signs
3. Positive laboratory / radiological investigations related to cardiological or neurological disorders

A total of 177 consecutive patients were enrolled between 1982 and 2012

All patients meeting the inclusion criteria underwent, in time, assessment of the brain/stomach or heart/stomach reflexes until , after referral to the local Cardiological or Neurological Hospital Department , an established diagnosis was achieved.

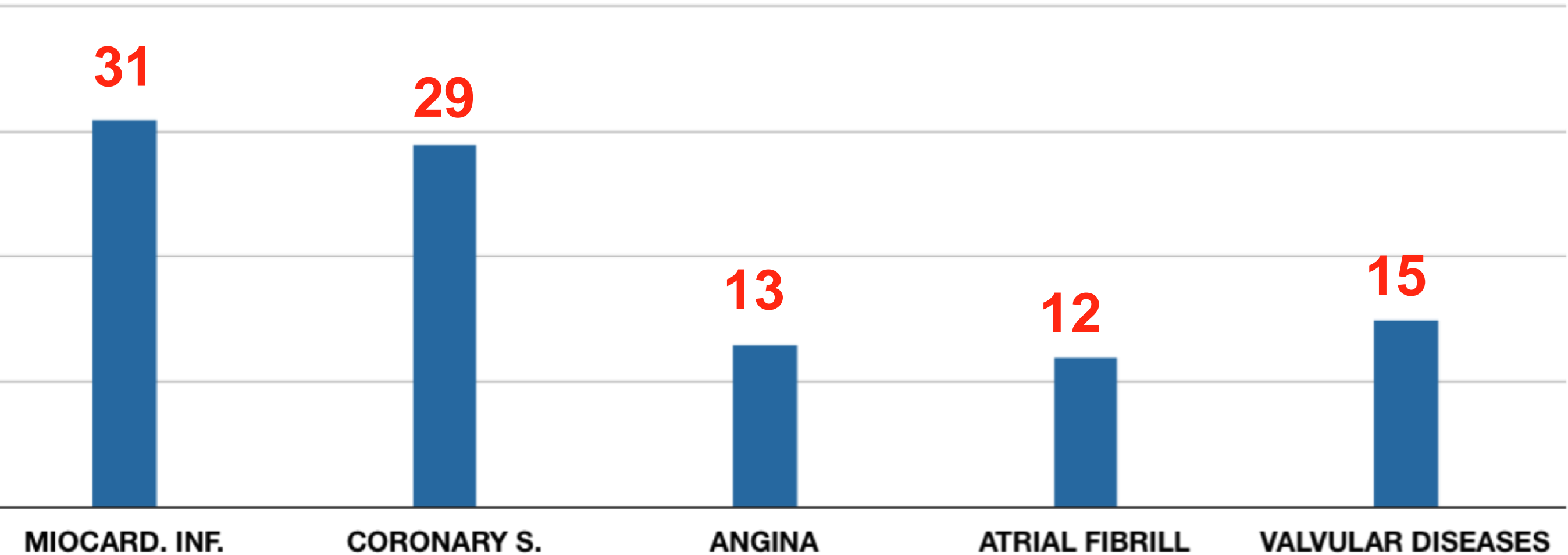
When an established diagnosis was achieved, the brain/stomach or heart/stomach reflexes were followed up in time (mean follow up 6 years)

**PATIENTS PRESENTING WITH ASPECIFIC
NEUROLOGICAL SYMPTOMS , N = 77**
Age range: 45 - 75 years-old



**ESTABLISHED DIAGNOSIS AFTER
REFERRAL**

PATIENTS PRESENTING WITH ASPECIFIC CARDIOLOGICAL SYMPTOMS , N = 100
Age range: 25 - 70 years-old



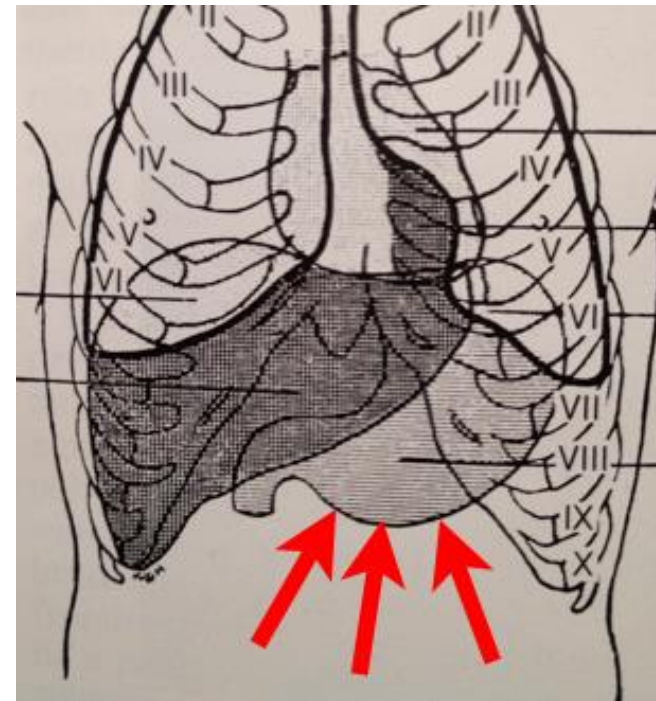
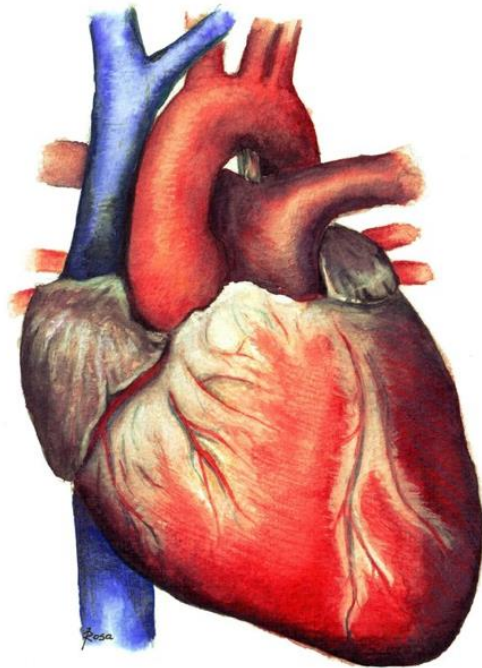
ESTABLISHED DIAGNOSIS AFTER REFERRAL

Outcome measures:

(1) to establish the variations over time (mean follow up 6 years) of the spatial / temporal parameters of the gastric reflexes

(2) to assess whether the observed numerical values can be correlated with the progression of a cardiological or neurological disorder from the pre-clinical to a clinical stage

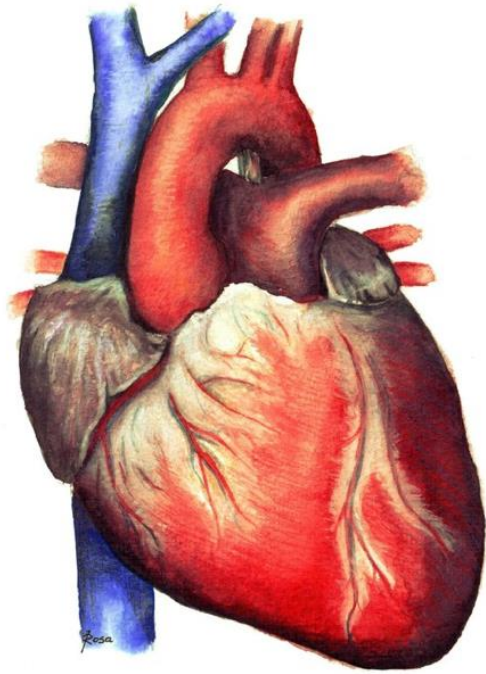
Heart / Stomach



Reflex Diagnostic Tests

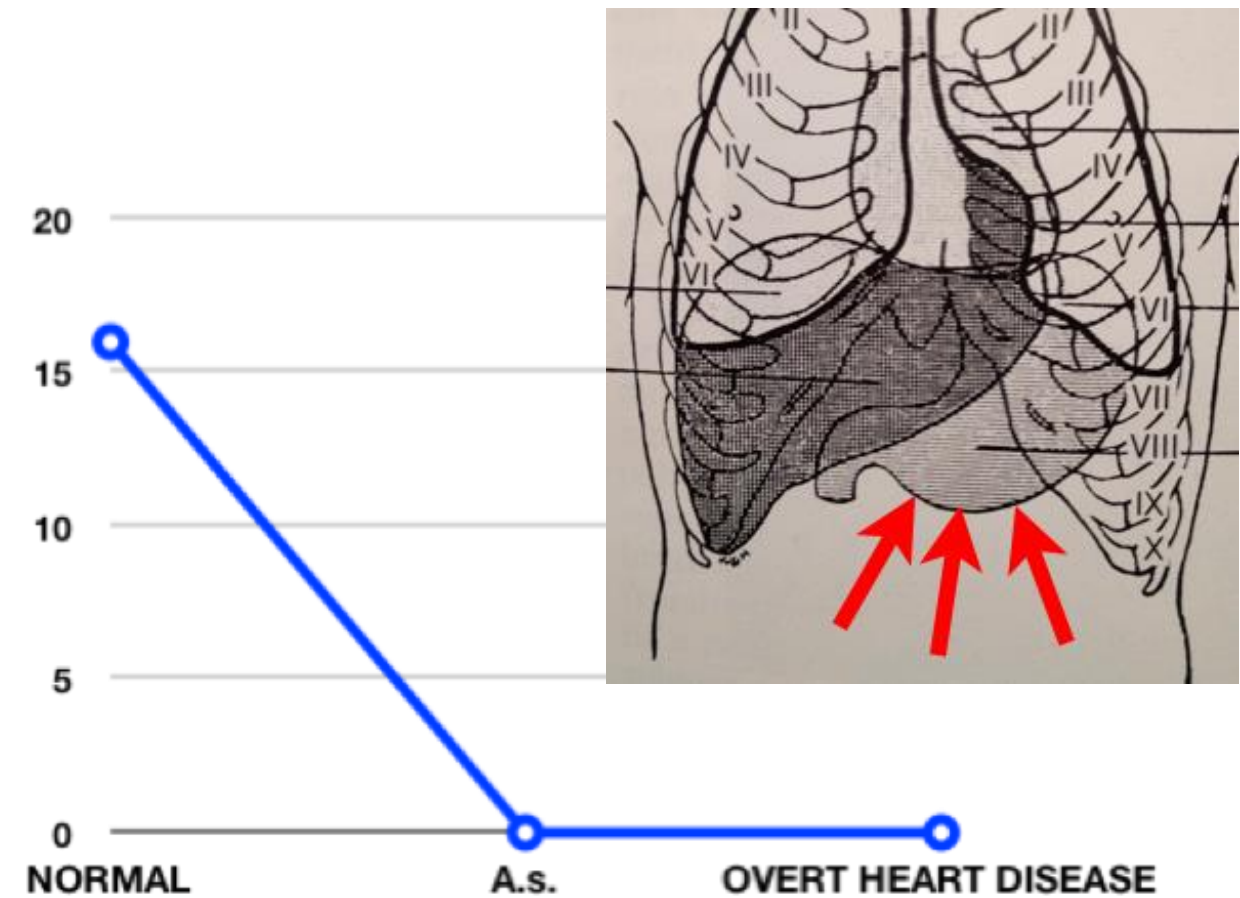
In the cardiological group of patients ($N = 100$), which auscultatory gastric reflex patterns are observed after the application of a pressure stimulus over the skin projection of the heart ?

After the application of an intense pressure stimulus over the skin projection of the heart the following **LATENCY TIMES** are observed:

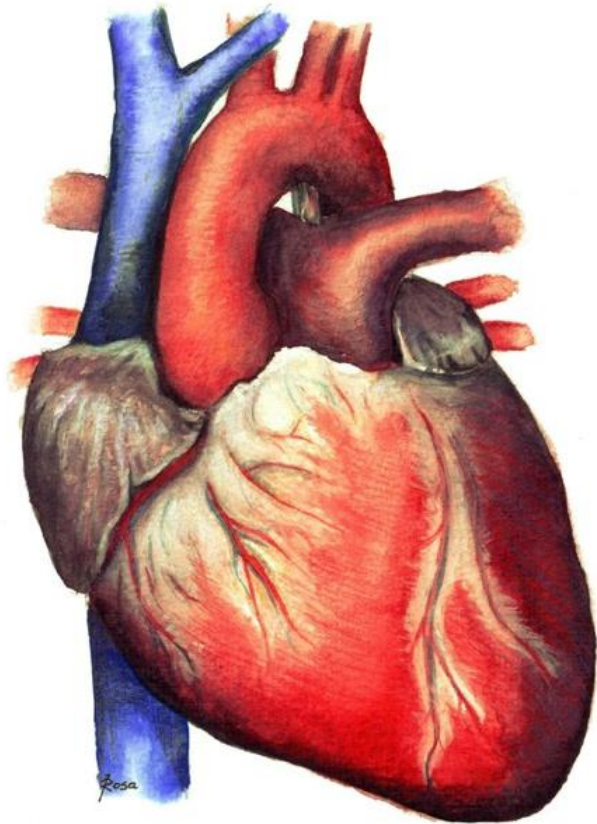


	Latency Time (sec)
Health	16
Aspecific Symp.	0
Overt Heart Disease	0

○ LATENCY (sec)

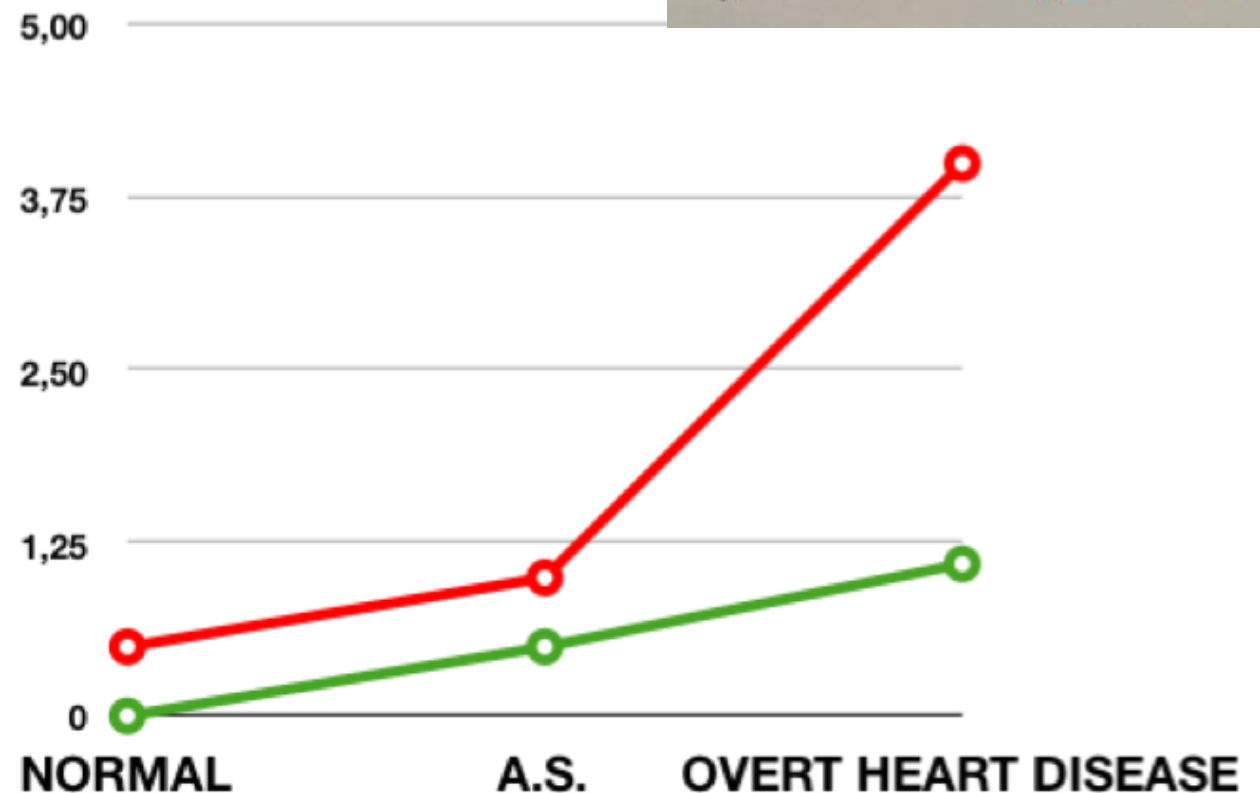
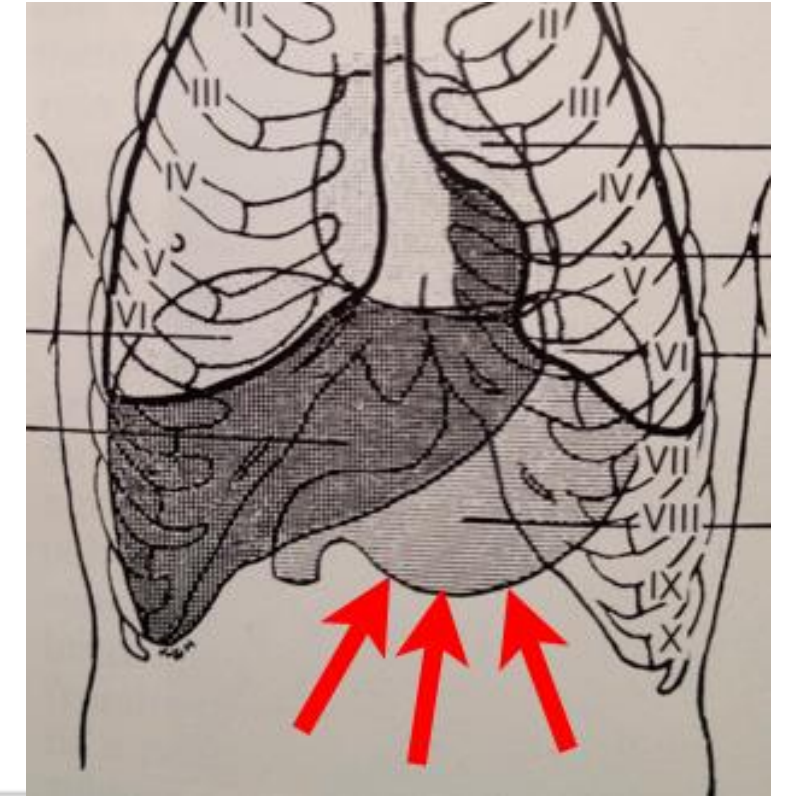


After the application of an intense pressure stimulus over the skin projection of the heart the following **DILATATION** values are observed:

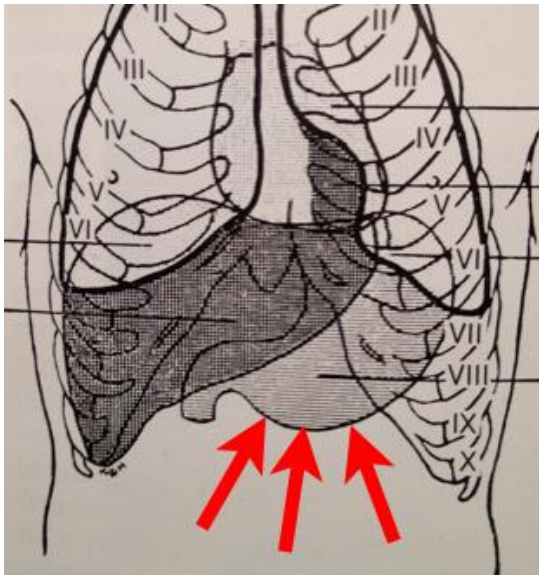
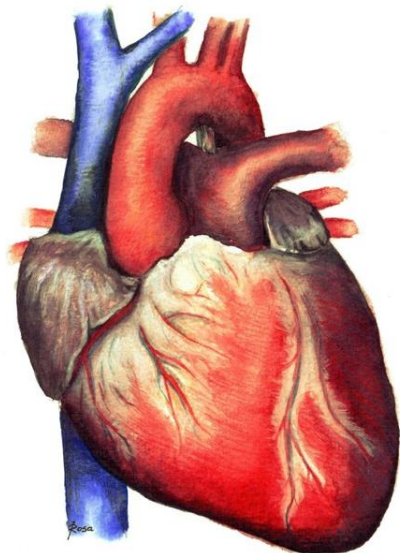


	Dilatation (cm)
Health	0, <0.5
Aspecific Symp.	>0.5, <1.0
Overt Heart Disease	>1.0, 4.0

○ DILATATION min
○ DILATATION max



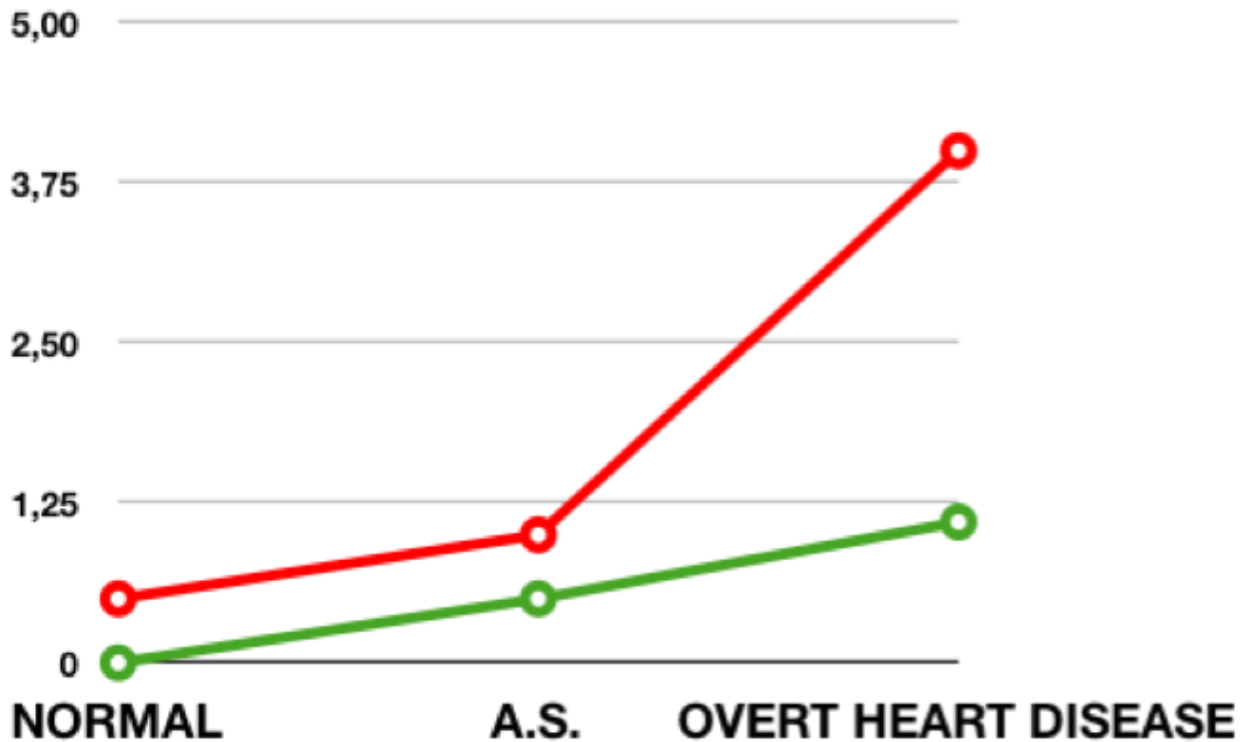
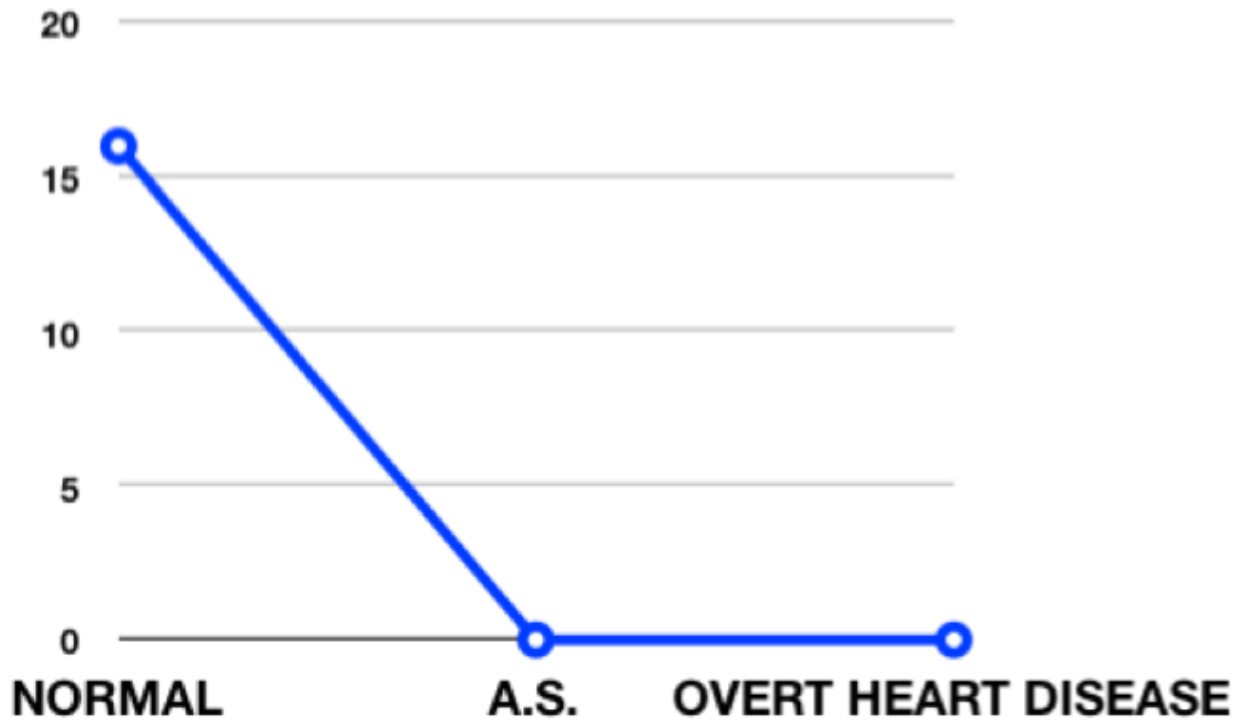
Summary of patterns in TIME (sec) and SPACE (cm) following the application of an intense pressure stimulus over the skin projection of the heart

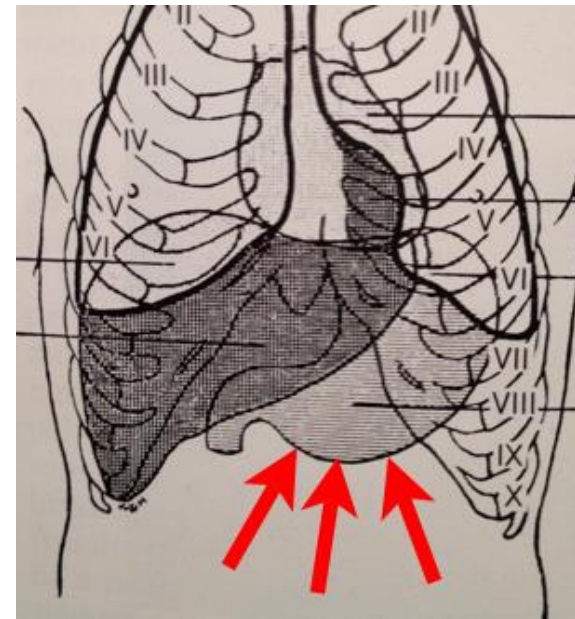
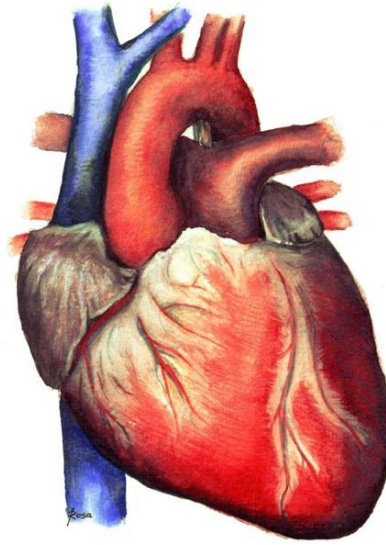


○ LATENCY (sec)

○ DILATATION min

○ DILATATION max





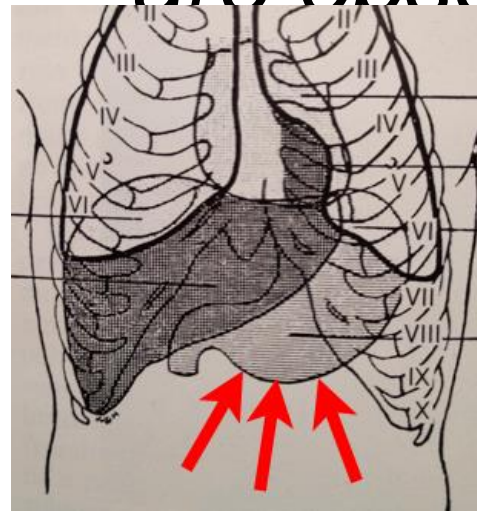
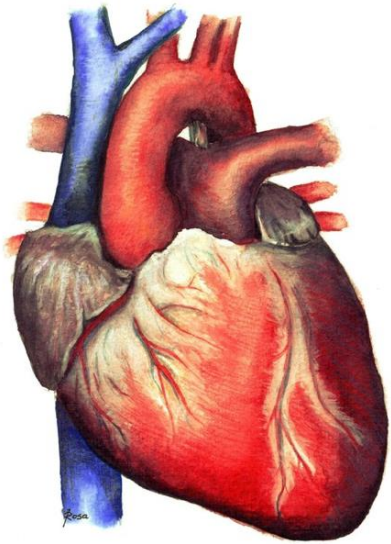
○ LATENCY (sec)



How can we further assess the patients presenting with aspecific symptoms ?
1. the intensity of the pressure stimulus will be reduced, from high to medium-low

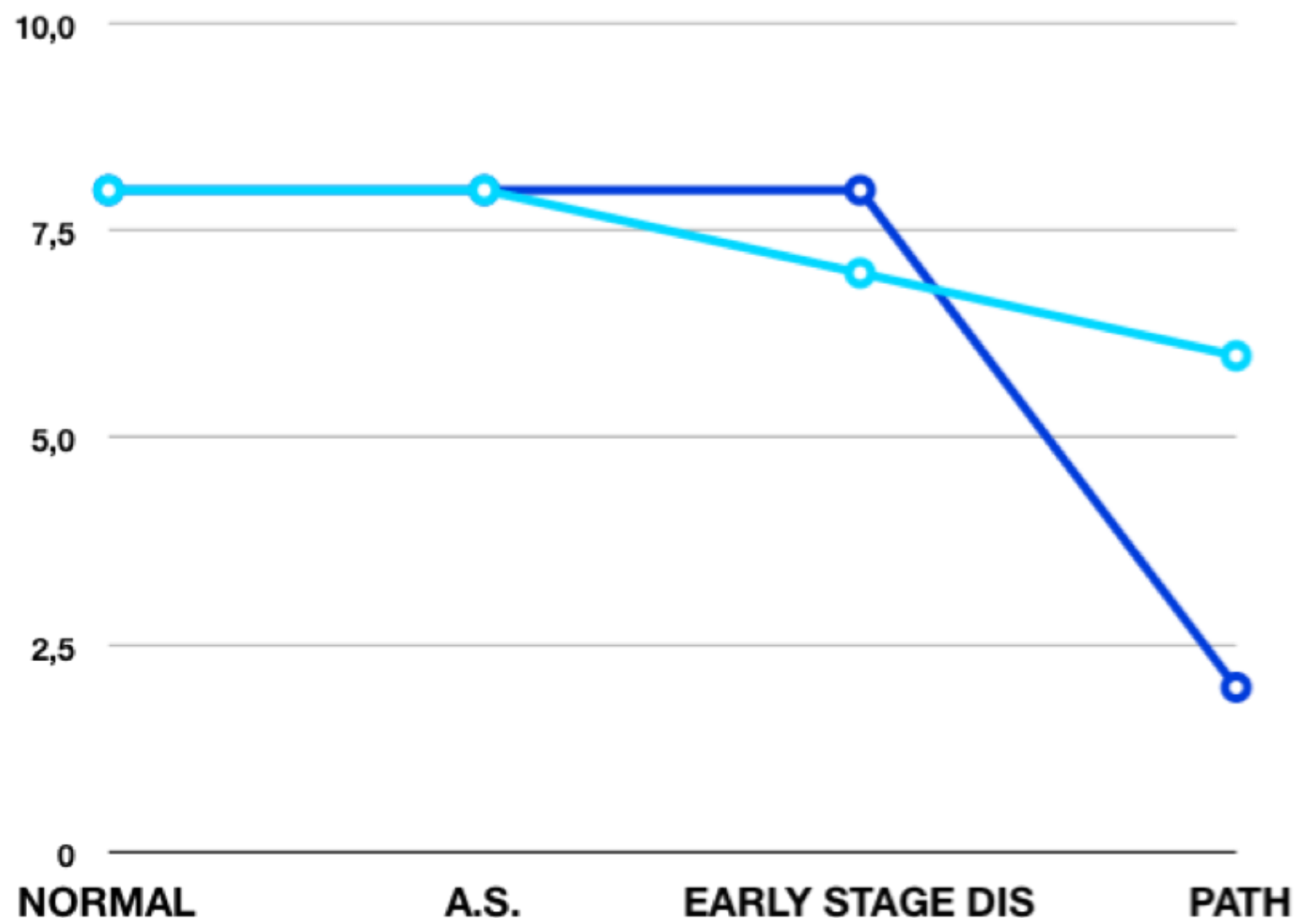
2. the Heart Gastric Reflex is repeated

After the application of a medium-low pressure stimulus over the skin projection of the heart the following **LATENCY TIMES** are observed:

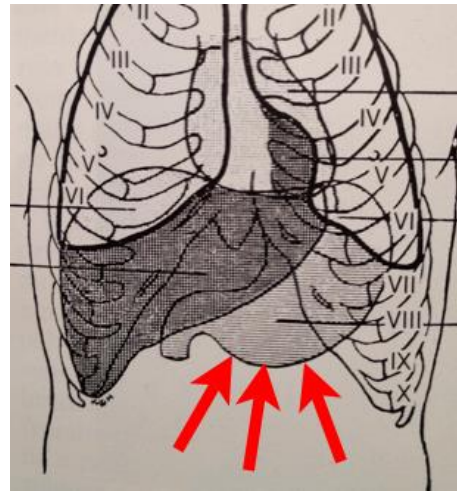
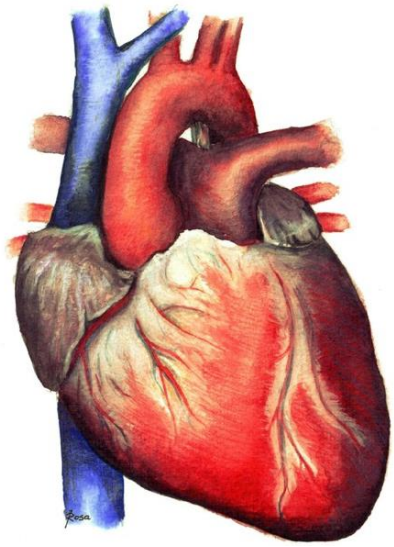


	LATENCY sec
Normal	8
Aspecific Symptoms	< 8
Early Stage Heart Disease	> 7, < 8
Overt Heart Pathology	< 7

○ LATENCY min ○ LATENCY max

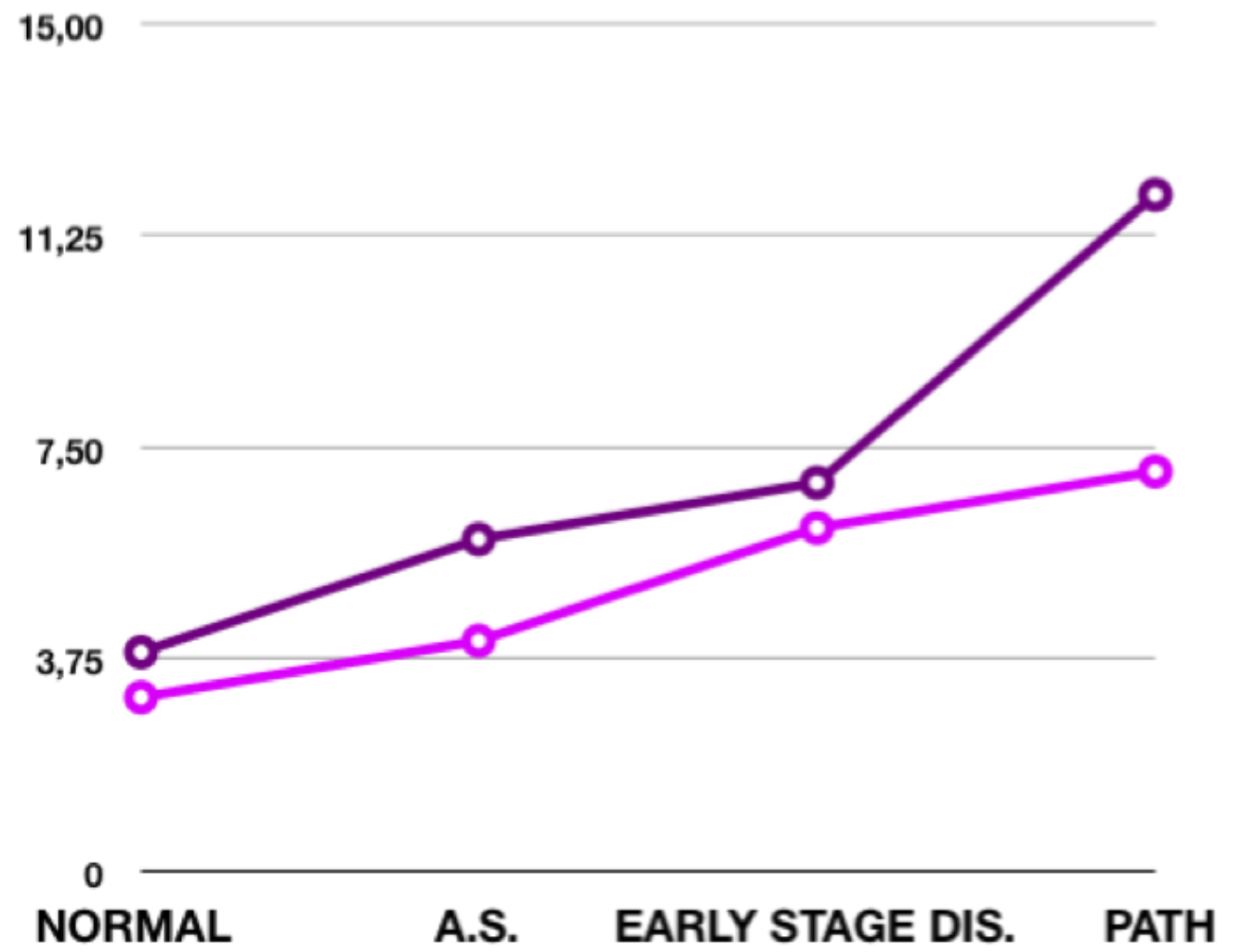


After the application of an medium-flow pressure stimulus over the skin projection of the heart the following **DURATION** times are observed:

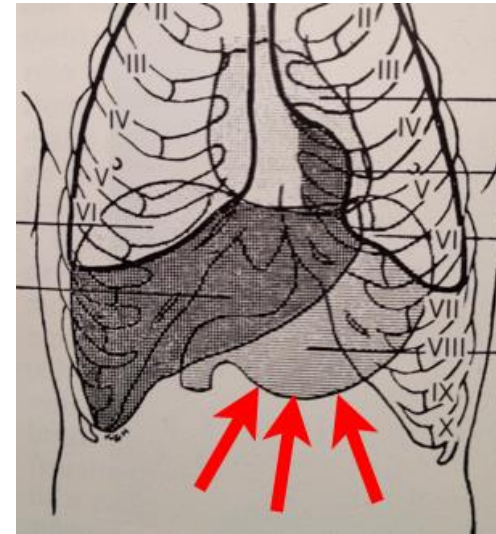
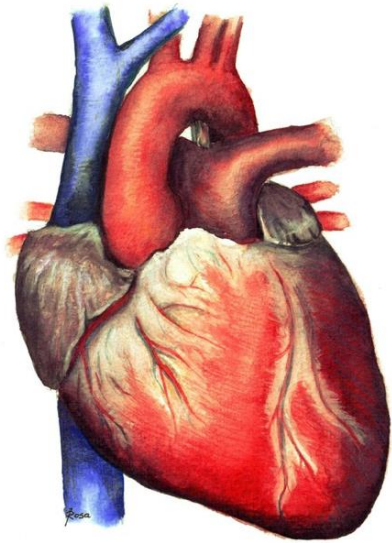


○ DURATION min ○ DURATION max

	DURATION sec
Normal	> 3, < 4
Aspecific Symptoms	> 4, < 6
Early Stage Heart Disease	> 6, < 7
Overt Heart pathology	> 7, < 12

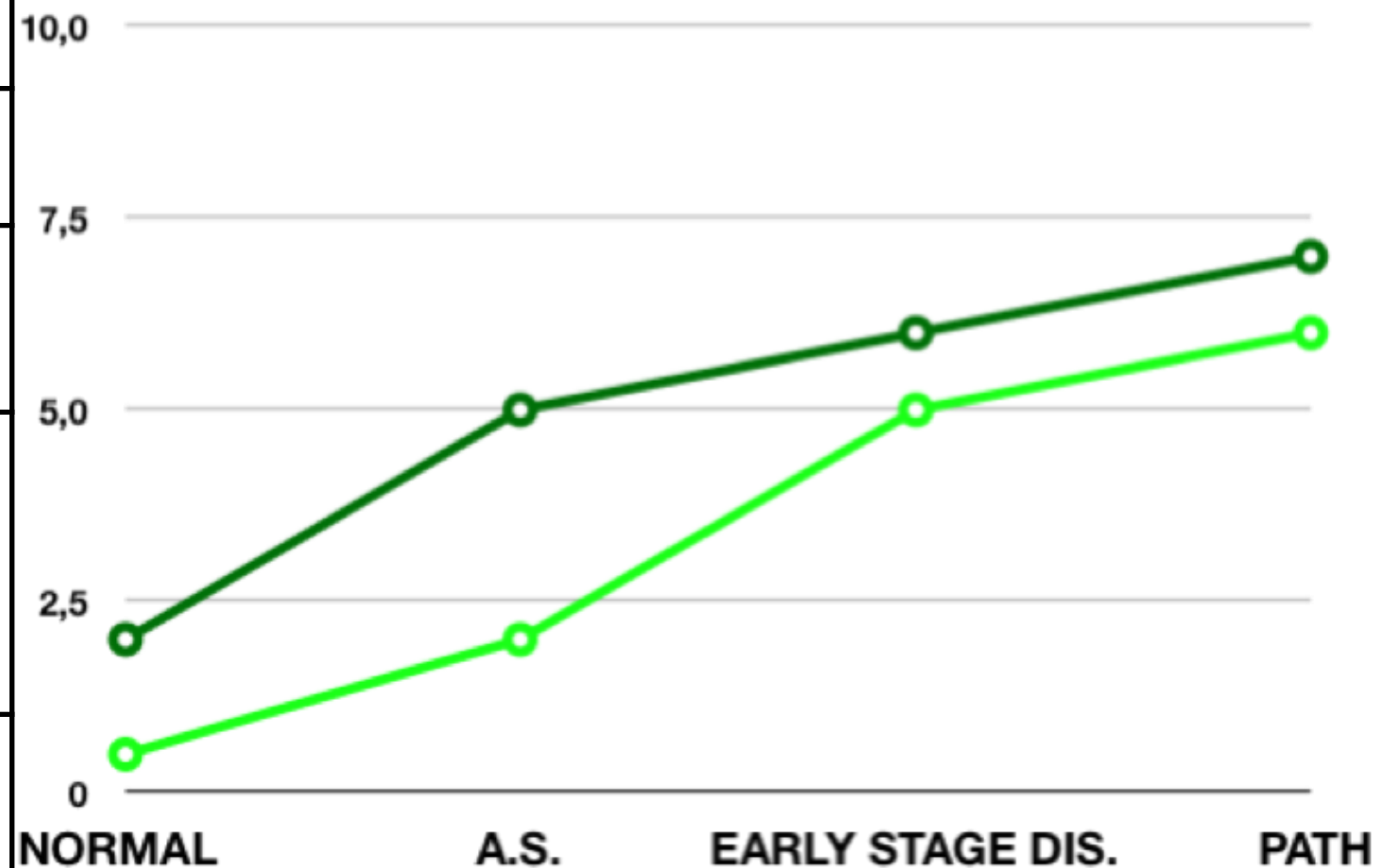


After the application of an medium-low pressure stimulus over the skin projection of the heart the following **DILATATION** values are observed:

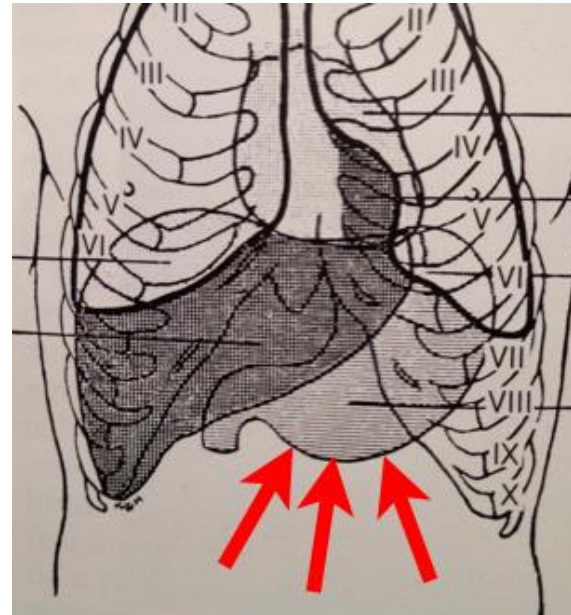
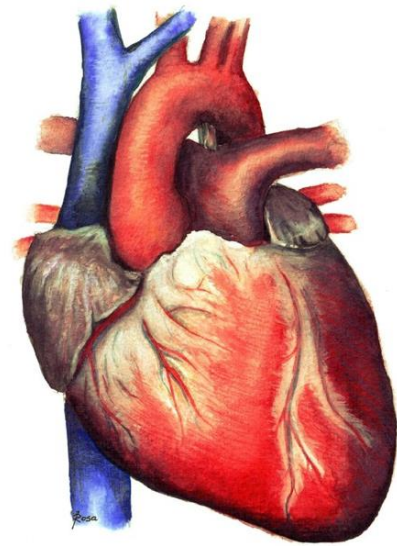


○ DILATATION min
○ DILATATION max

	STOMACH DILATATION cm
Normal	> 0.5 < 2
Aspecific Symptoms	> 2 < 5
Early Stage Heart Disease	> 5 < 6
Overt Heart Pathology	> 6 < 7

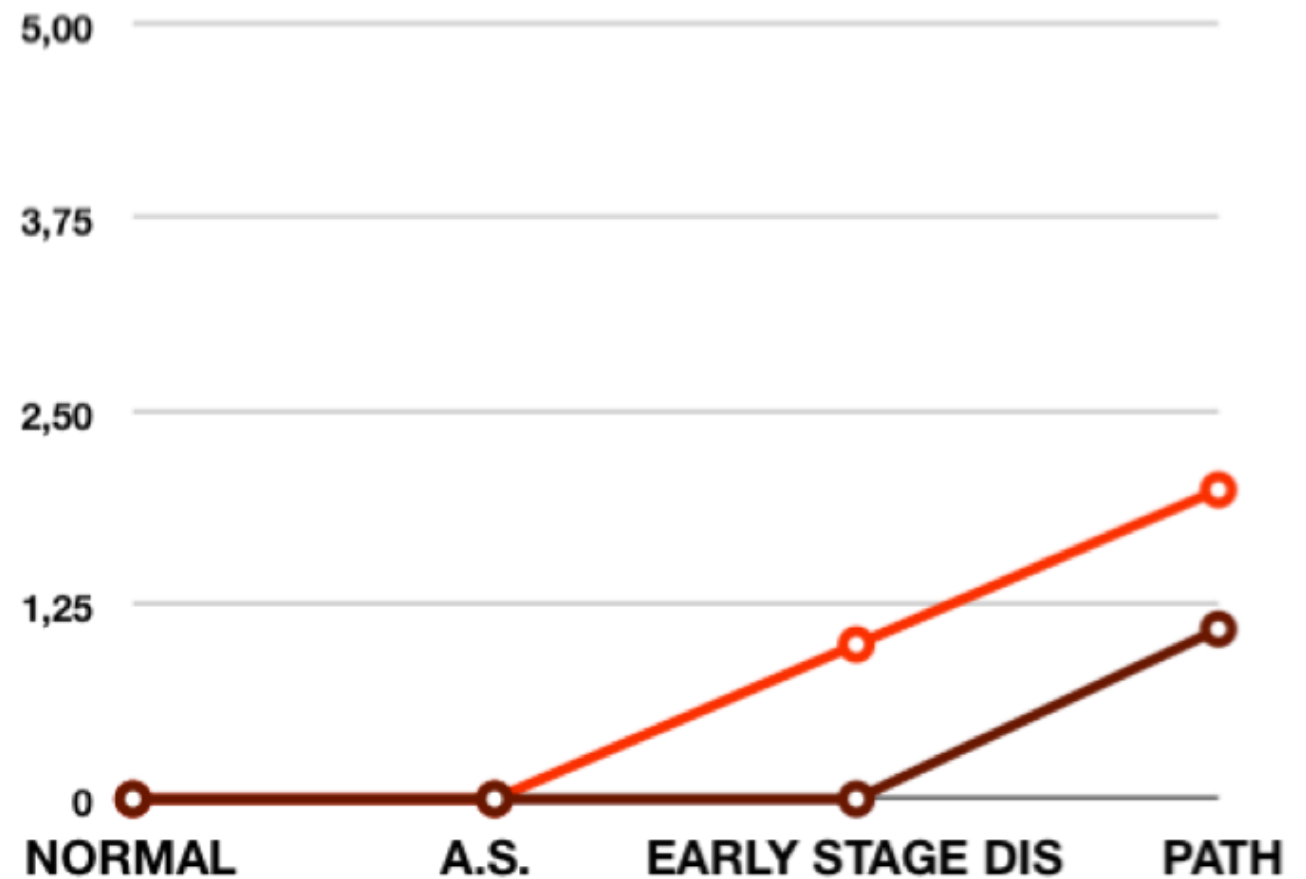


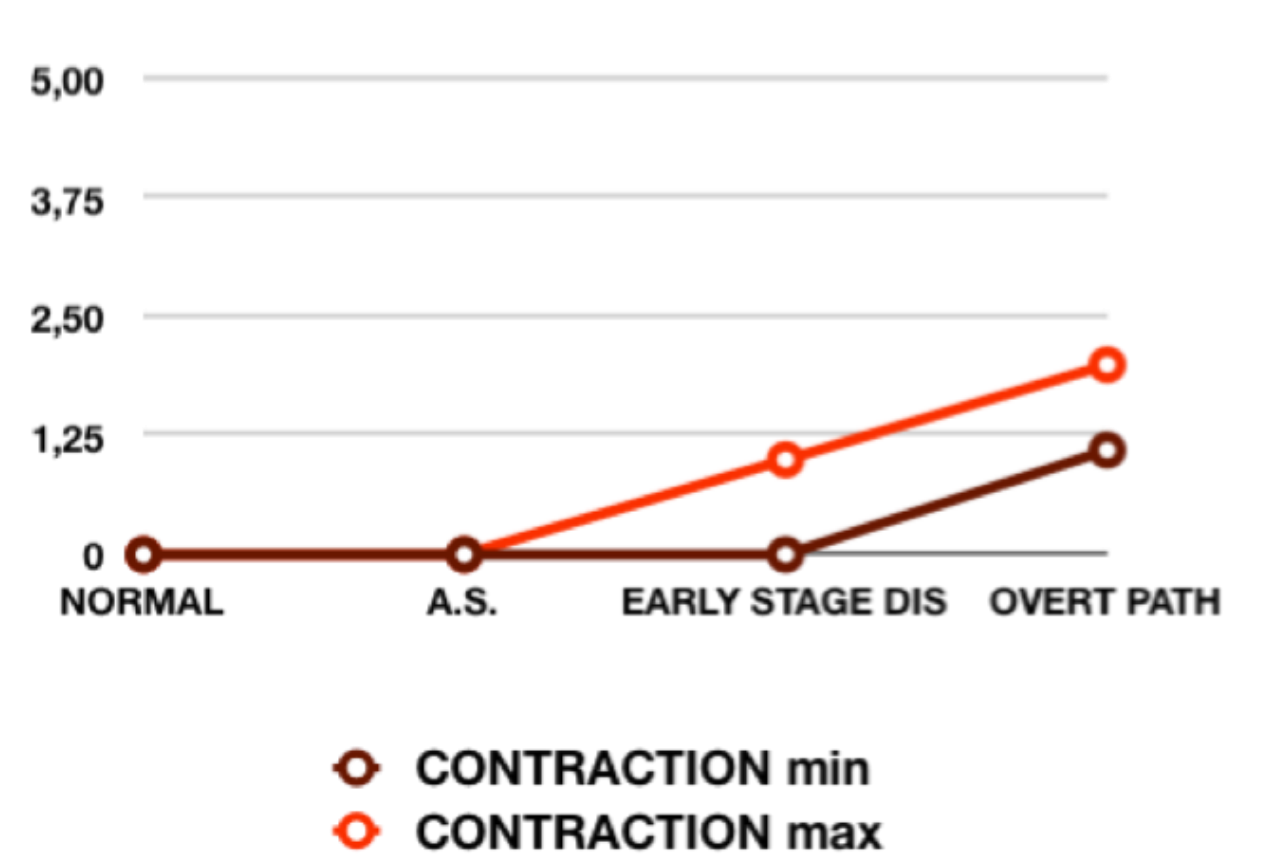
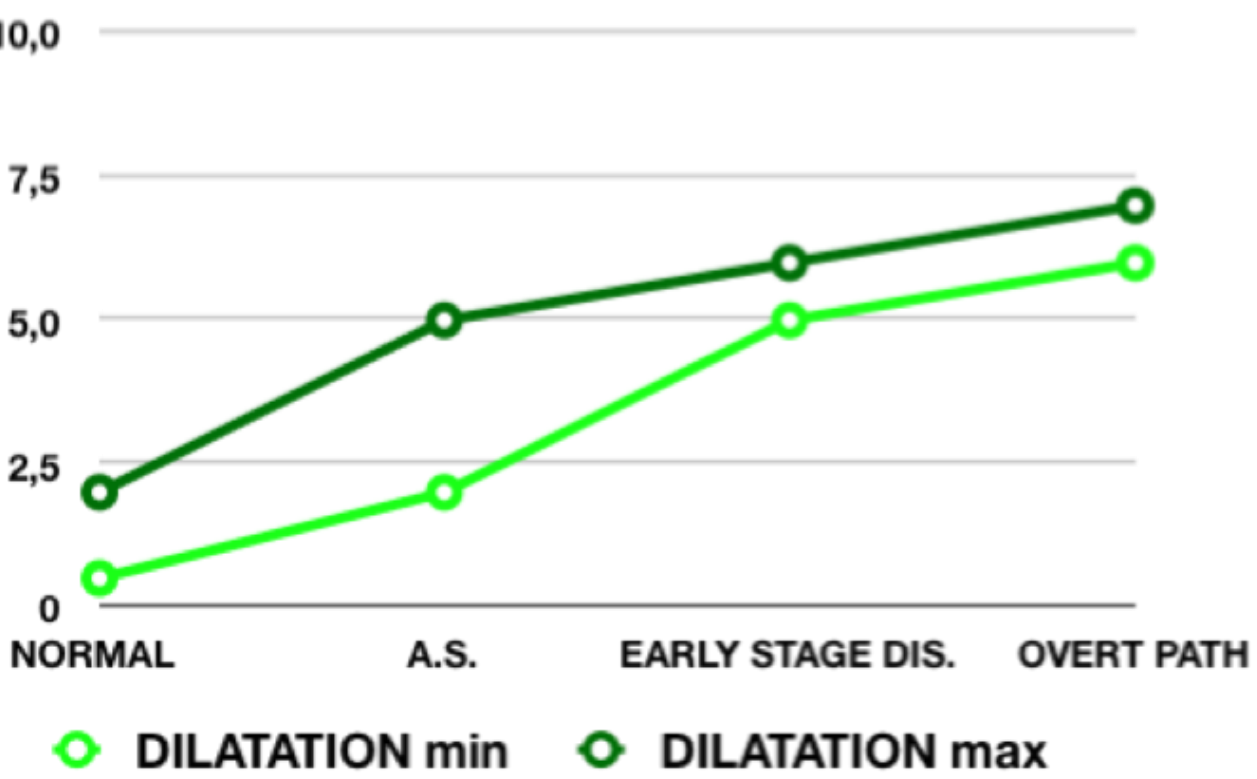
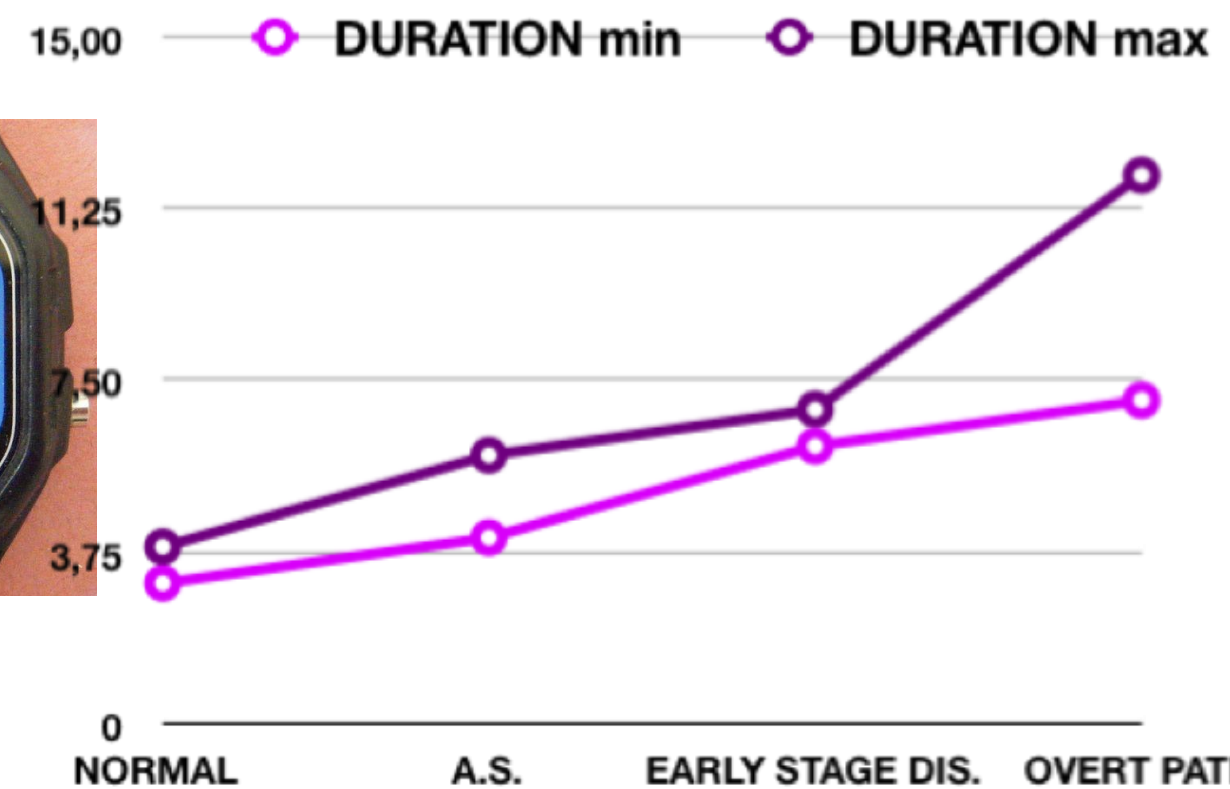
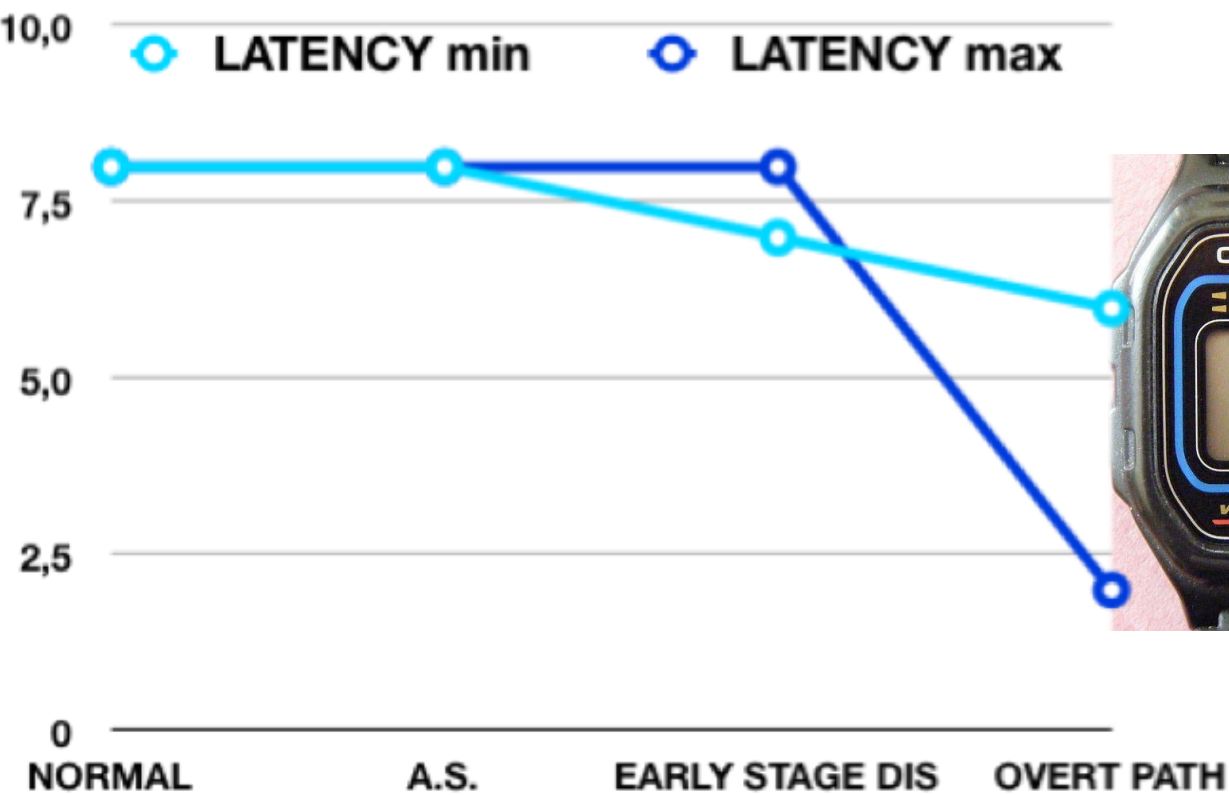
*After the application of an medium-low pressure stimulus over the skin projection of the heart the following **CONTRACTION** values are observed:*



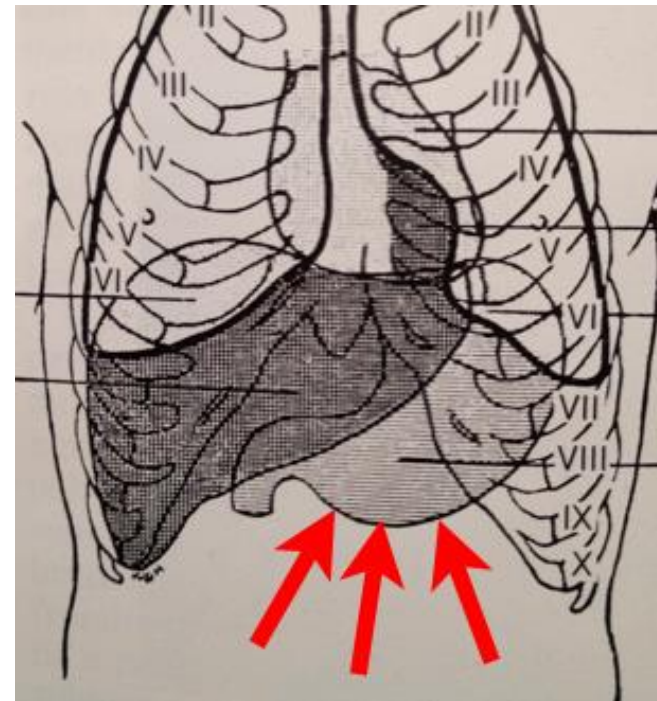
○ CONTRACTION min
○ CONTRACTION max

	STOMACH CONTRACTION, cm
Normal	0
Aspecific Symptoms	0
Early Stage Heart Disease	> 0.5 < 1
Overt Heart Pathology	> 1.0





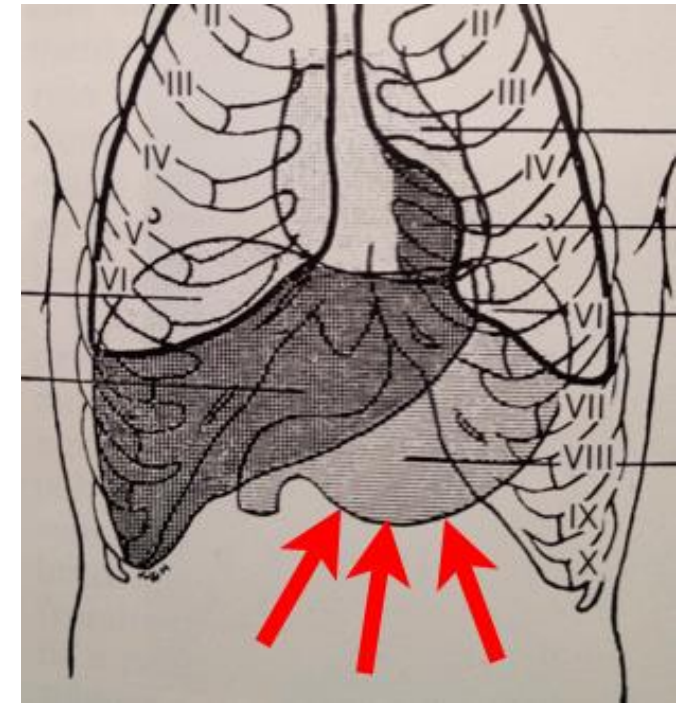
Brain / Stomach



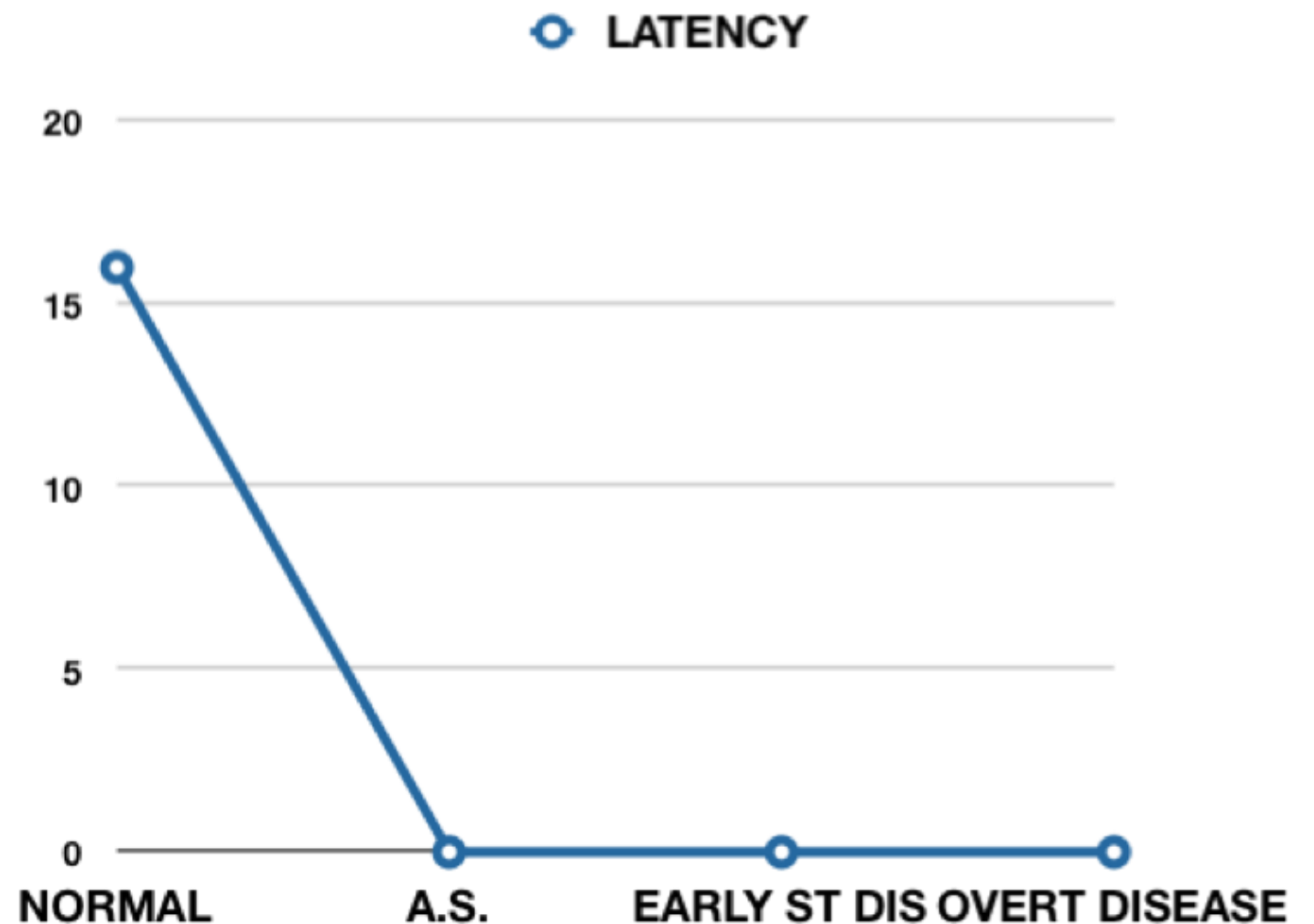
Reflex Diagnostic Tests

In the neurological group of patients ($N = 77$), which auscultatory gastric reflex patterns are observed after the application of a pressure stimulus over the scalp ?

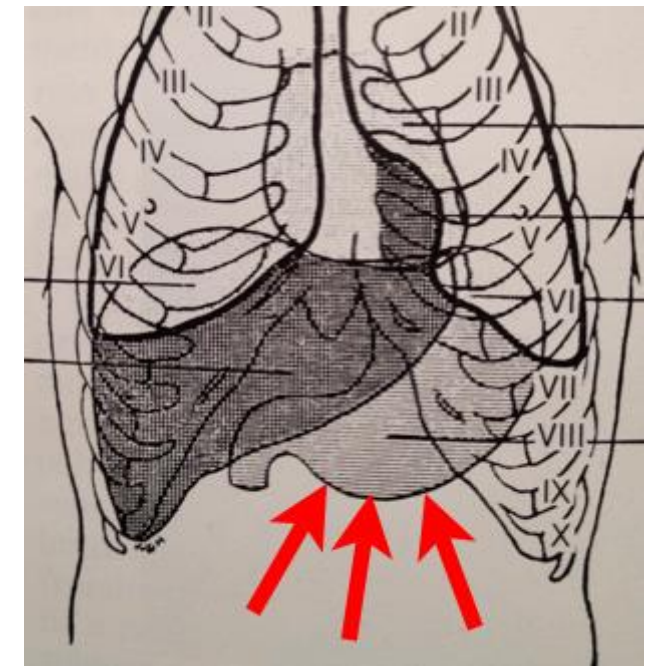
After the application of an intense pressure stimulus over the vertex of the cranium the following LATENCY times are



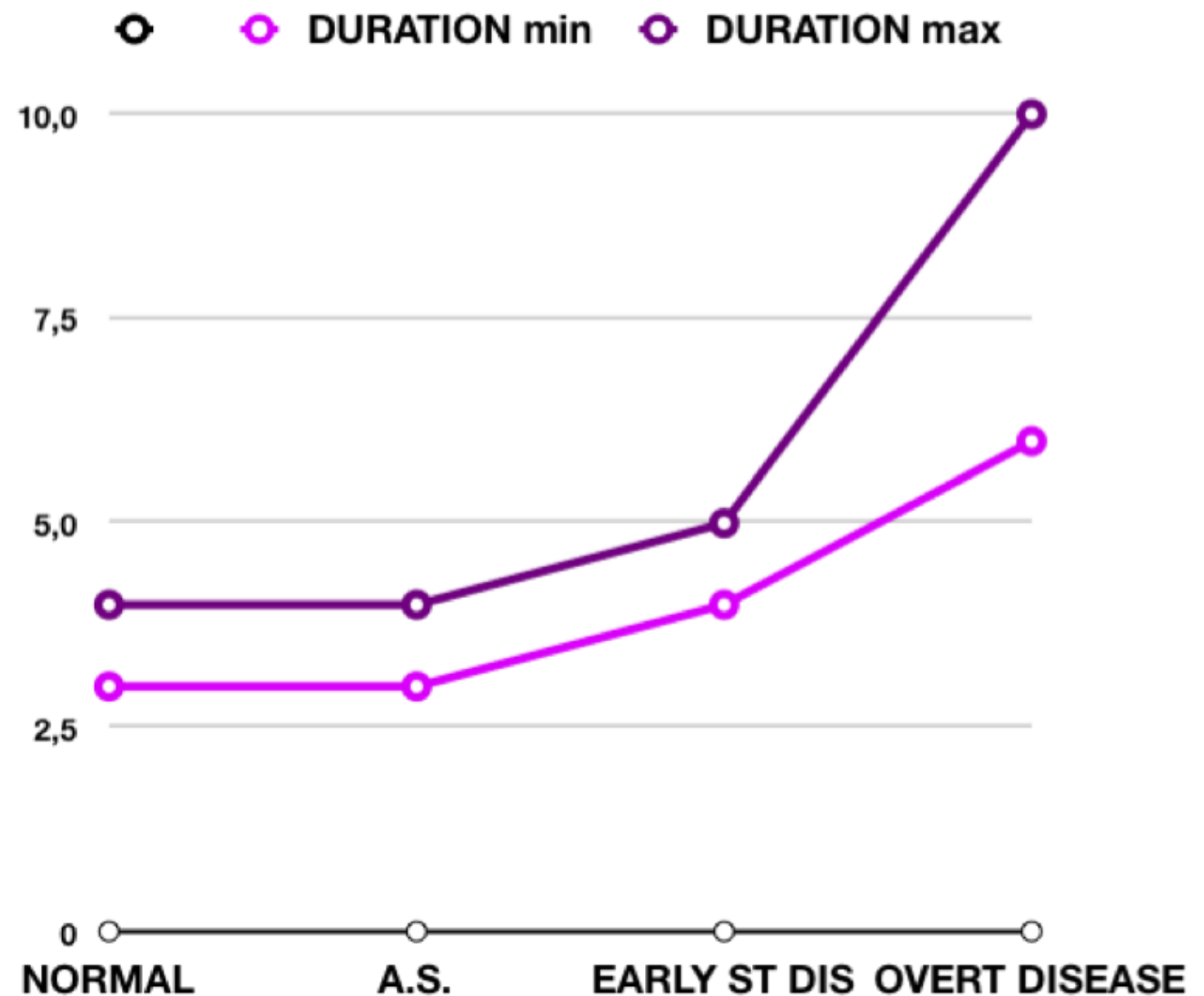
	observed: LATENCY sec
Normal	16
Aspecific Symptoms	0
early stage disease	0
overt brain pathology	0



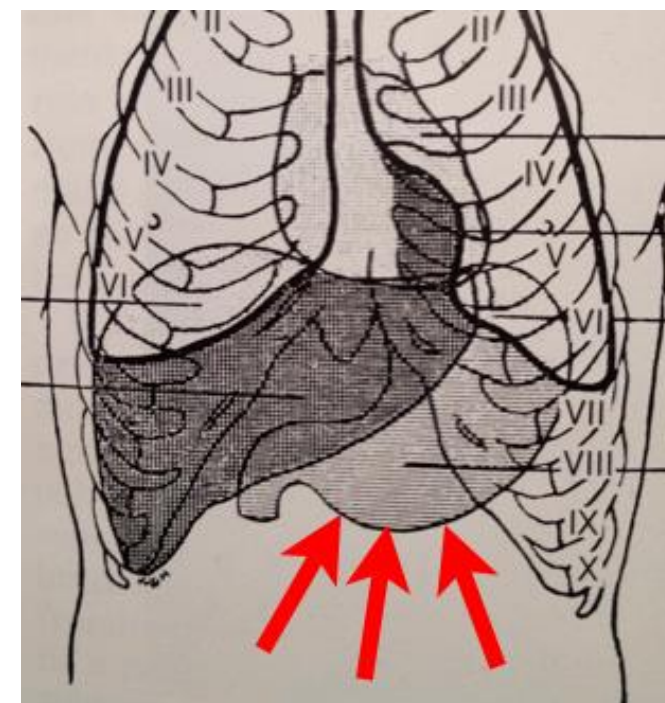
After the application of an intense pressure stimulus over the vertex of the cranium the following **DURATION** times are



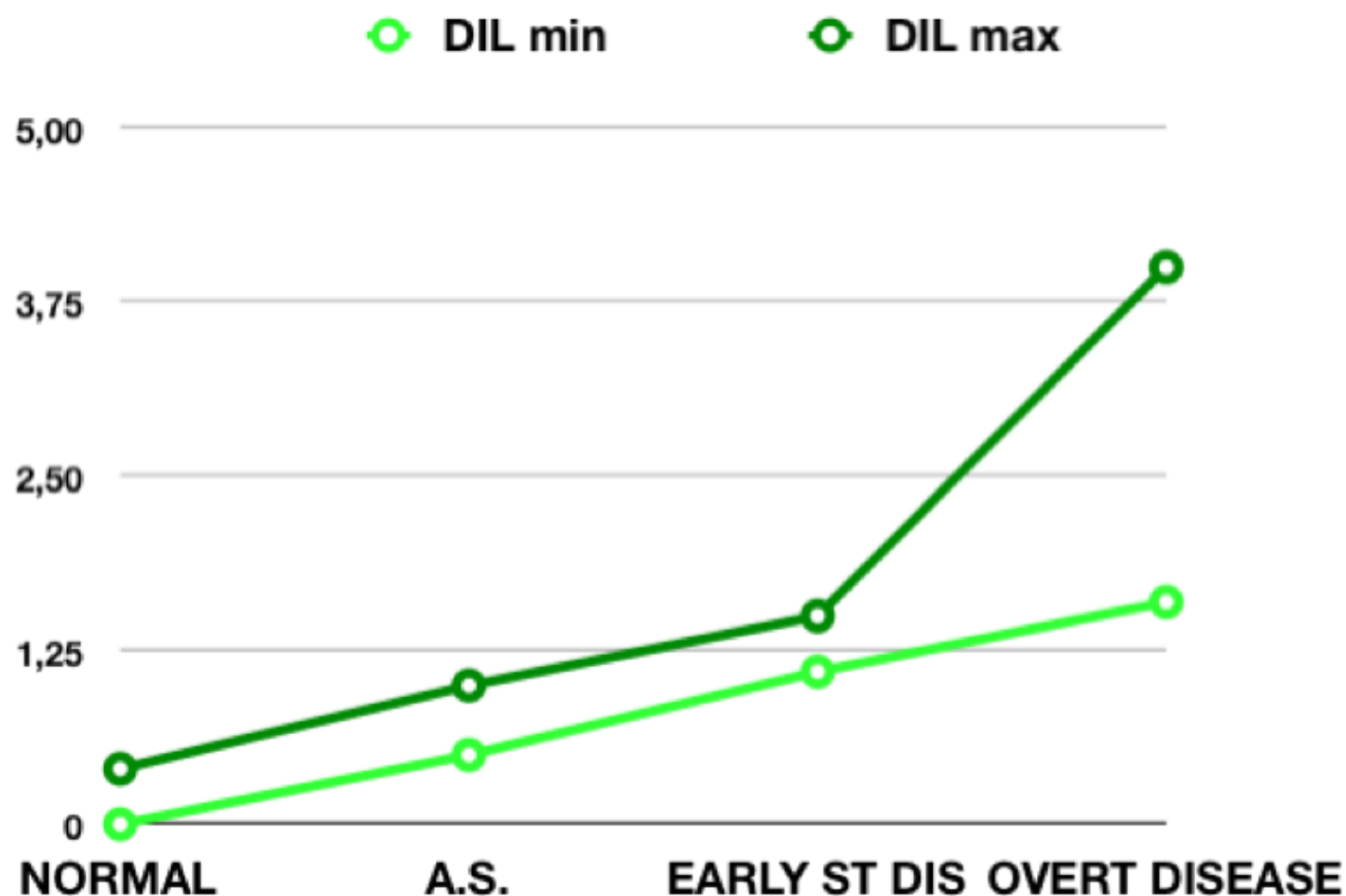
	observed: DURATION sec
Normal	> 3, < 4
Aspecific Symptoms	< 4 - 4
early stage dis	>4, <5
overt brain pathology	>6, 10



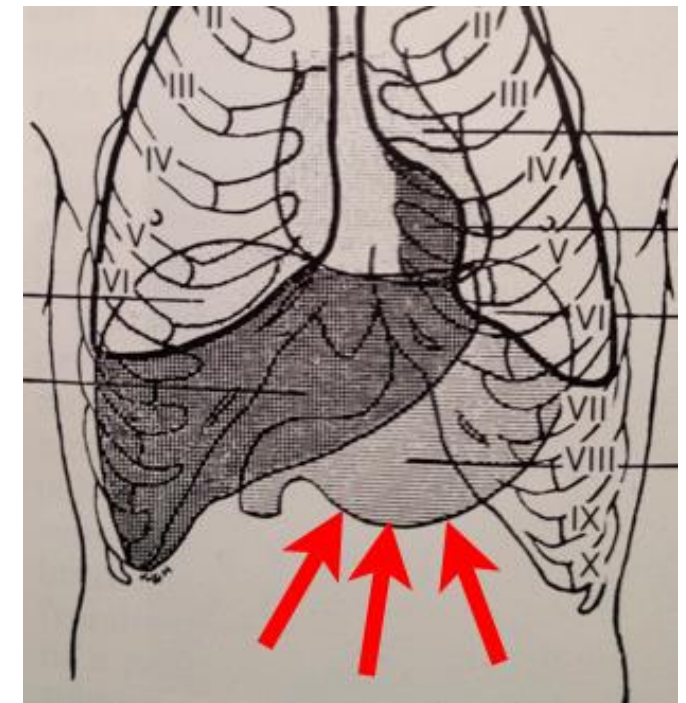
After the application of an intense pressure stimulus over the vertex of the cranium the following DILATATION values are observed:



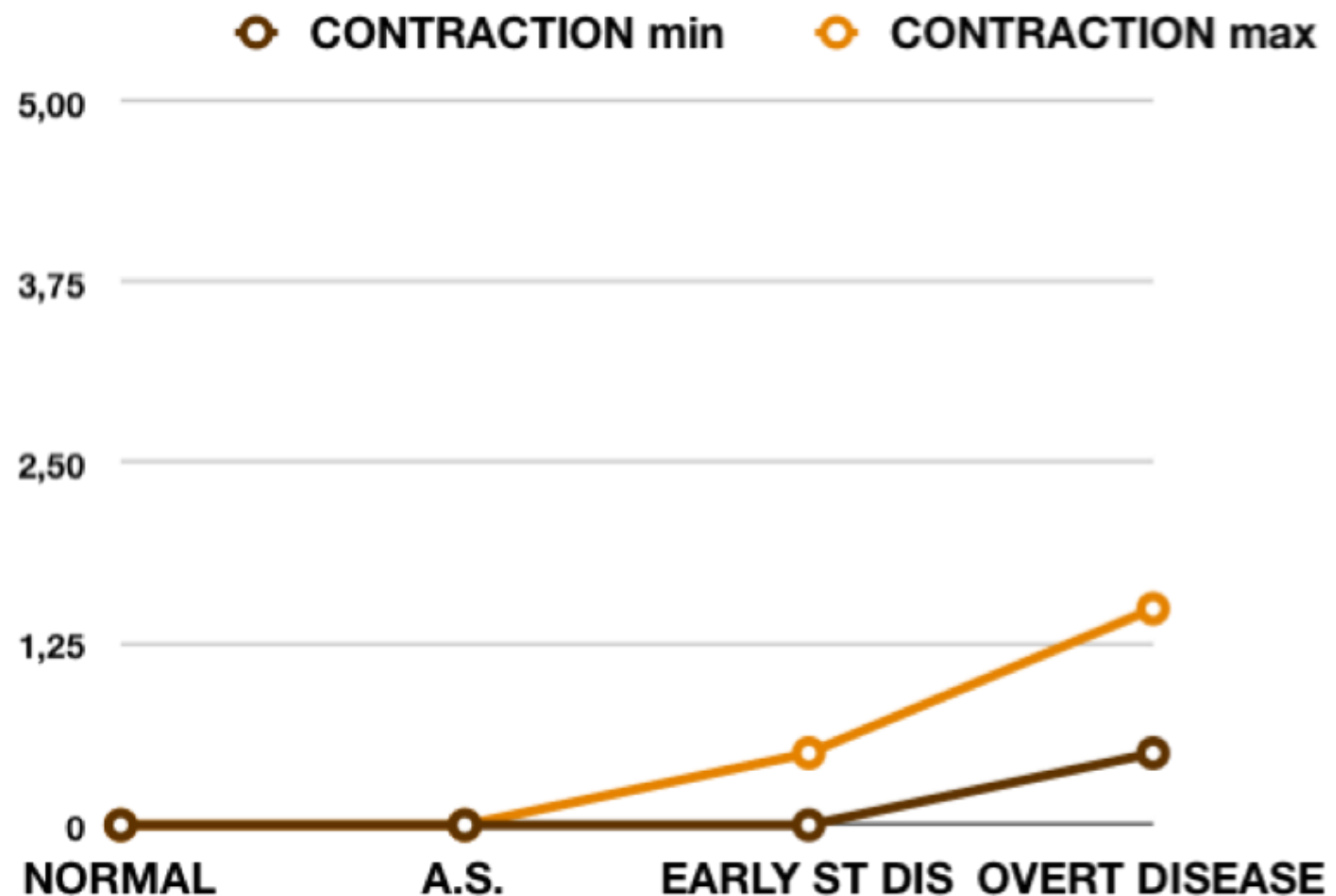
	DILATATION cm
Normal	0 - 0.5
Aspecific Symptoms	0.5 - 1
early stage disease	1 - 1.5
overt brain pathology	1.5 - 4



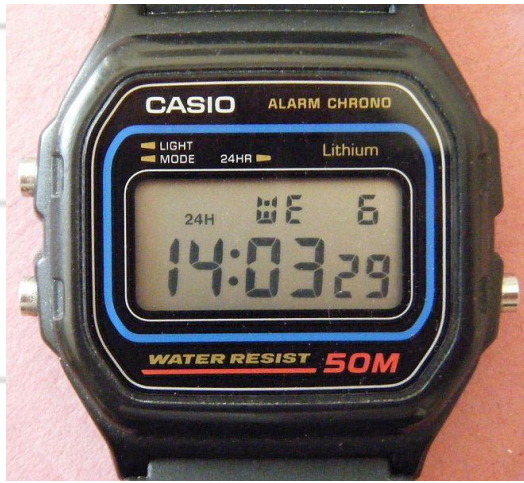
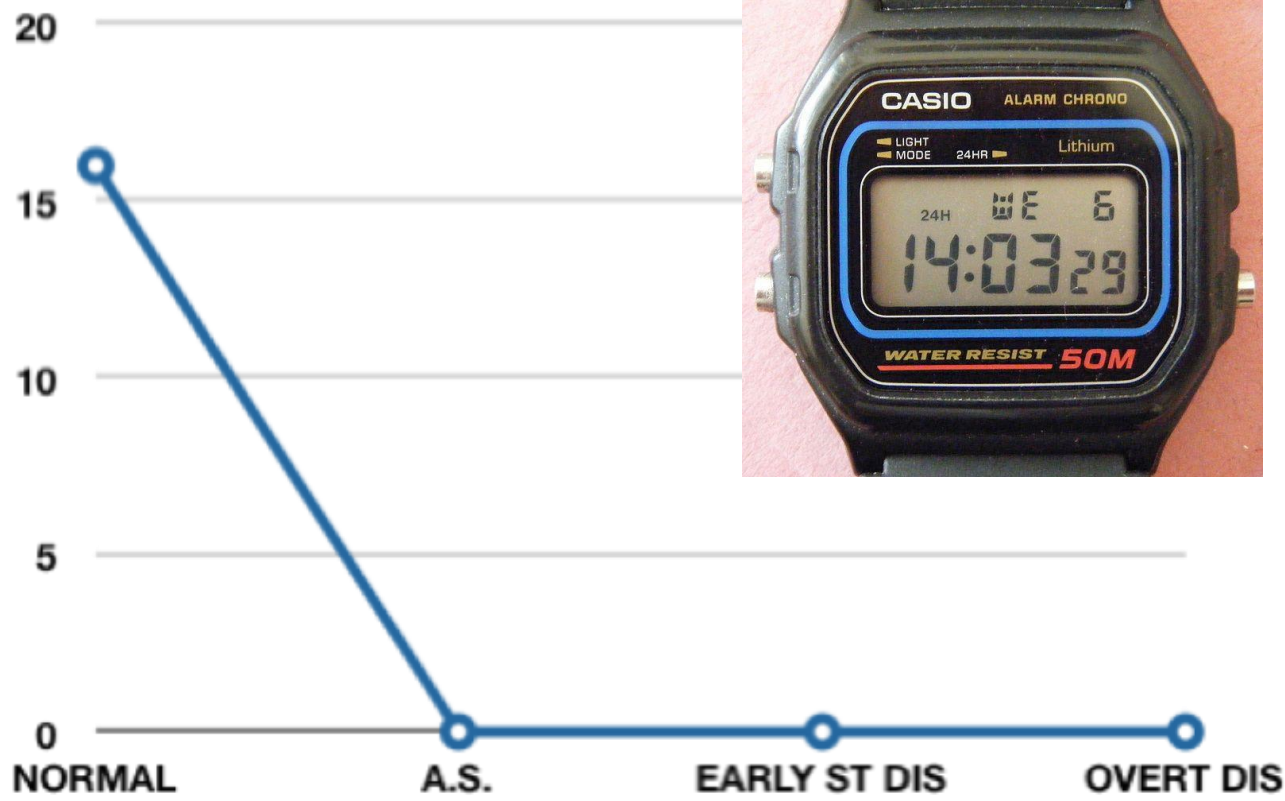
After the application of an intense pressure stimulus over the vertex of the cranium the following DURATION times are



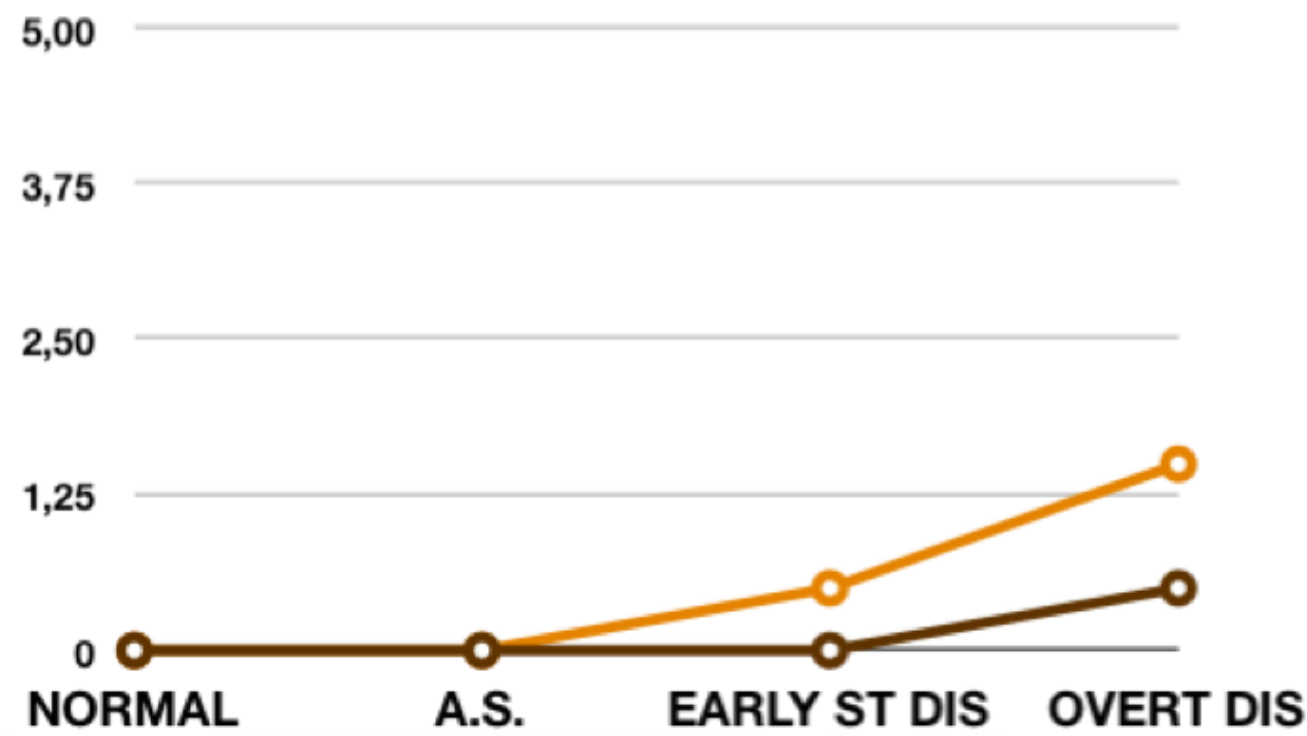
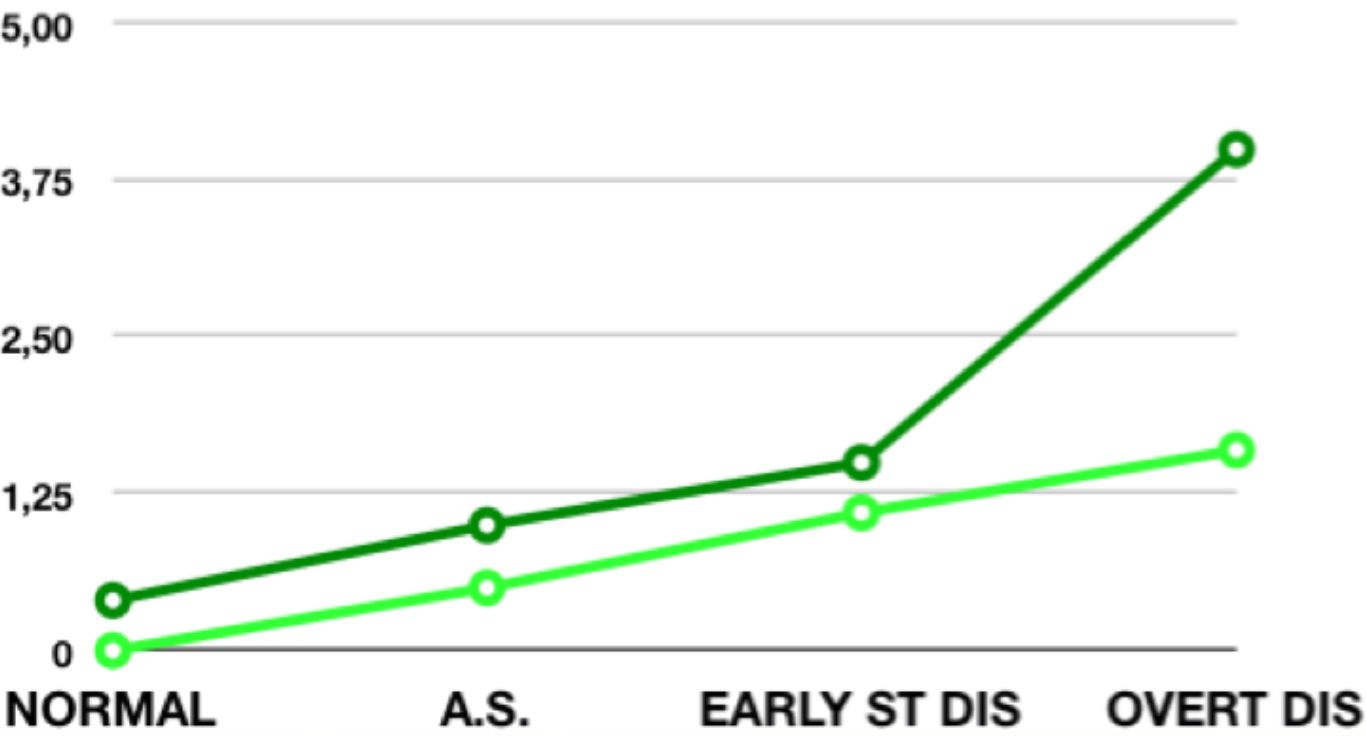
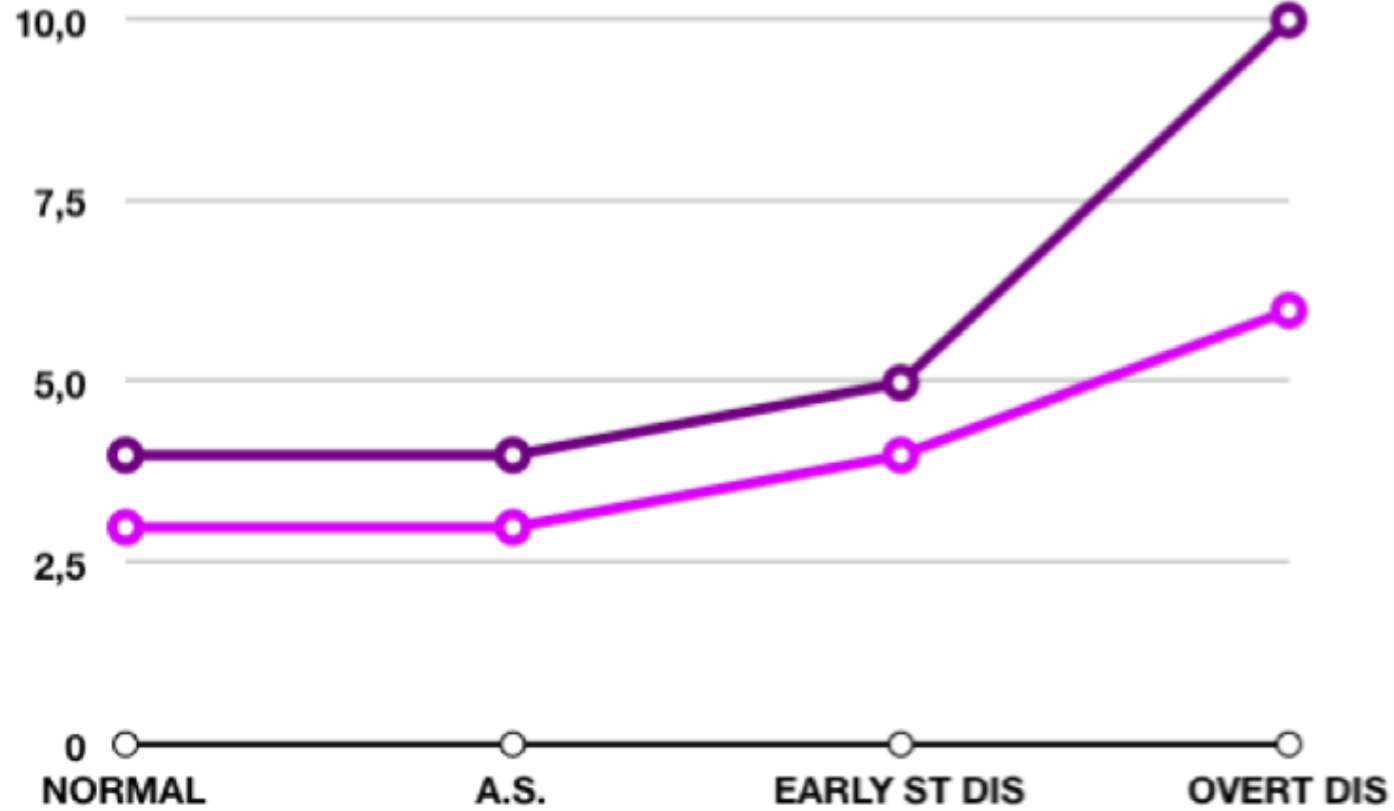
	observed: CONTRACTION cm
Normal	0
Aspecific Symptoms	0
early stage disease	0 - 0.5
overt brain pathology	1 -1.5



○ LATENCY



○ DURATION min ○ DURATION max



○ DIL min

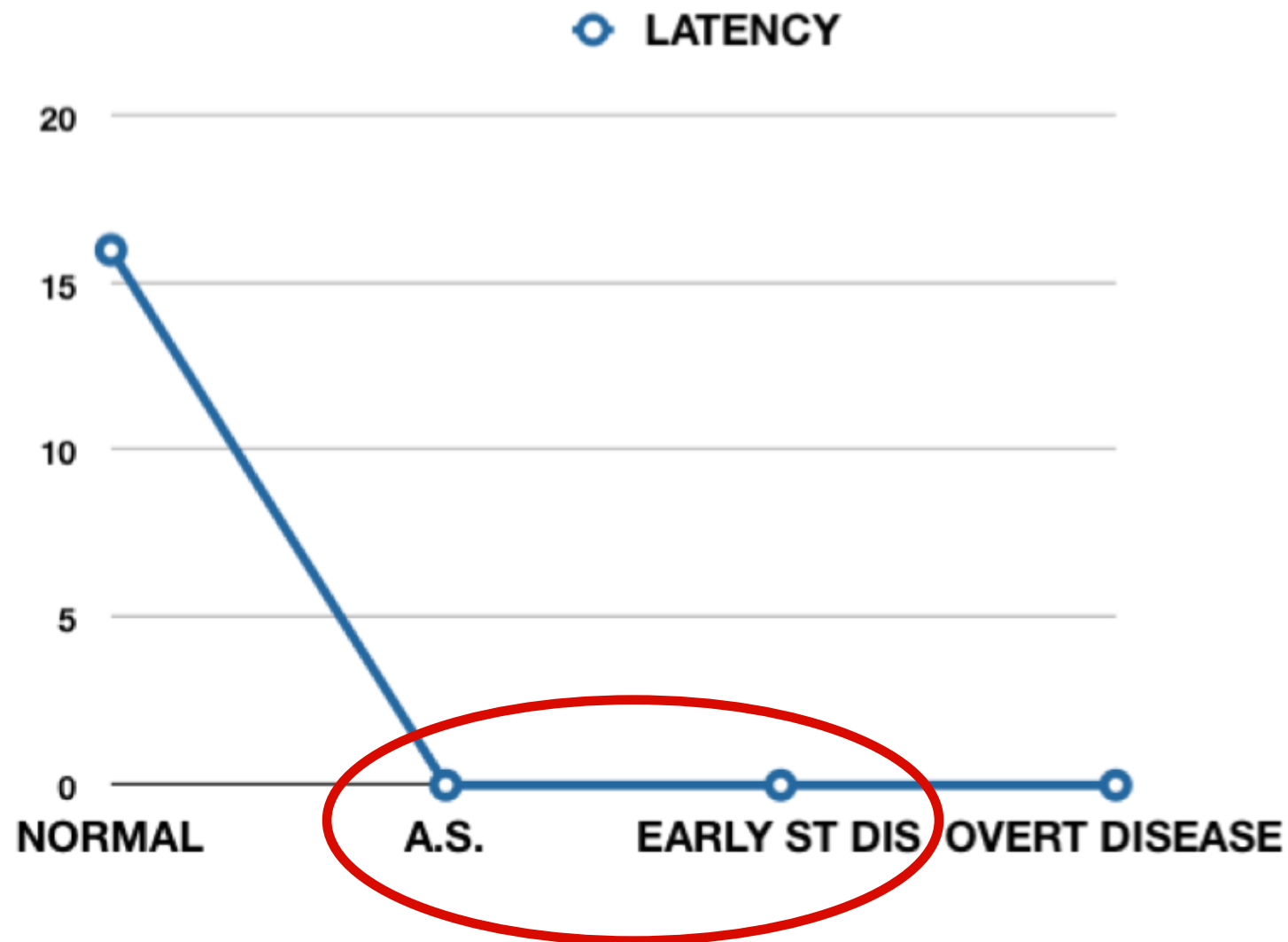
○ DIL max

○ CONTRACTION min

○ CONTRACTION max



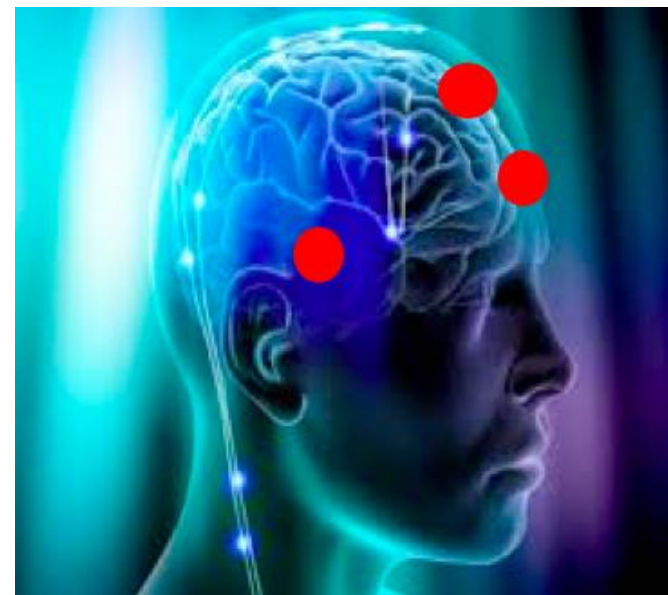
How to further assess the patients with aspecific symptoms / early stage of disease ?



The Brain Gastric Reflex is repeated:

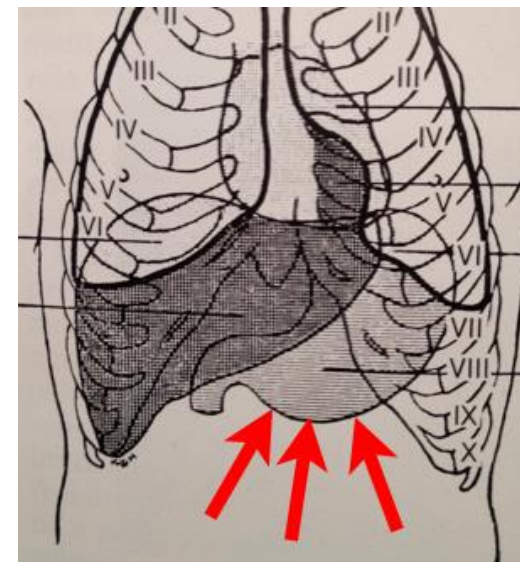
1. the intensity of the pressure stimulus will be reduced, from high to medium-low
2. the exact localization (“ trigger points “) of the stimulus on the scalp will be different according to the specific disorder to be evaluated.

When a medium-low pressure stimulus is applied on the frontal, prefrontal and temporal areas, the following parameters are observed in the patients with aspecific symptoms or at an early stage of Alzheimer Disease:



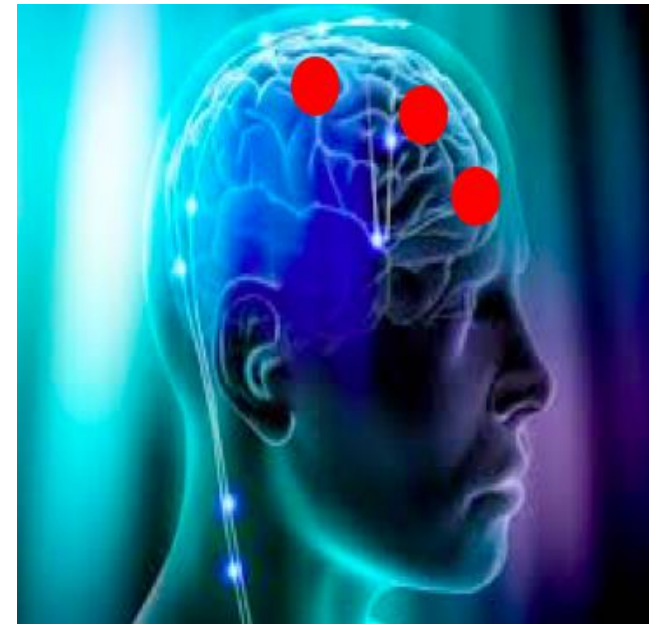
Alzheimer Disease

TRIGGER POINTS: Frontal, prefrontal and temporal

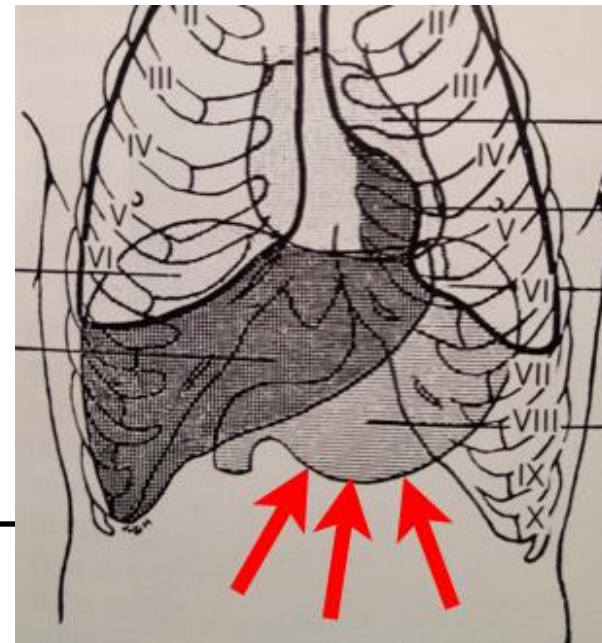


LATENCY, sec	DURATION, sec	STOMACH DILATATION, cm
less than 8	> 4	> 1 cm

When a microwatt low pressure stimulus is applied on the frontal, prefrontal and temporal areas, the following parameters are observed in the patients with aspecific symptoms or at an early stage of of Parkinson's Disease



Parkinson's Disease
TRIGGER POINTS: Pre frontal, frontal and anterior parietal

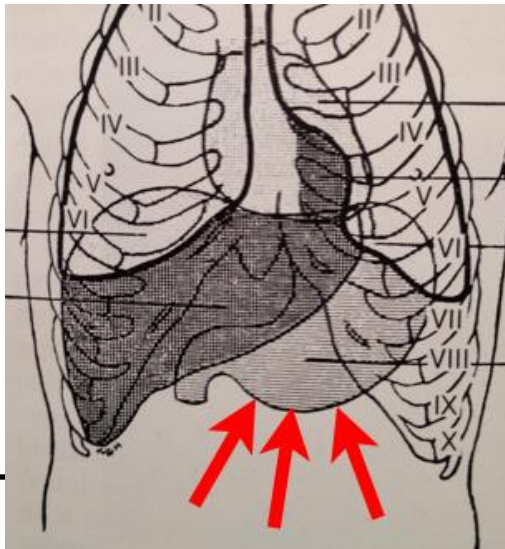


LATENCY, sec	DURATION, sec	STOMACH DILATATION, cm
less than 8	> 4	> 1 cm

When a medium-low pressure stimulus is applied on the frontal, prefrontal and temporal areas, the following parameters are observed in the patients with aspecific symptoms or at an early stage of Multiple Sclerosis



Multiple Sclerosis
TRIGGER POINTS: Frontal, temporal, occipital



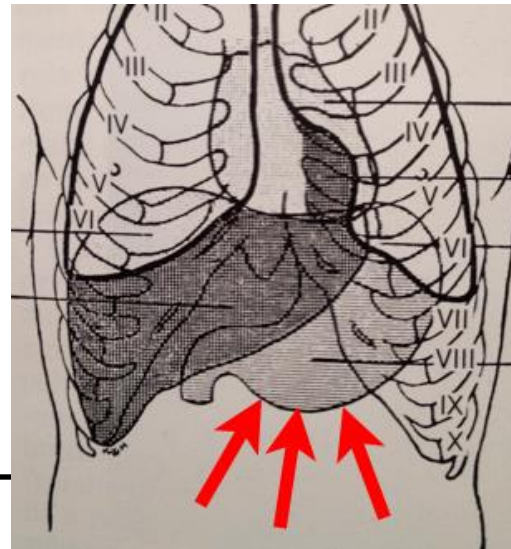
LATENCY, sec	DURATION, sec	STOMACH DILATATION, cm
less than 8	> 4	> 1 cm

When a medium-low pressure stimulus is applied on the posterior parietal area, the following parameters are observed in the patients with aspecific symptoms or at an early stage of Lateral Amyotrophic Sclerosis



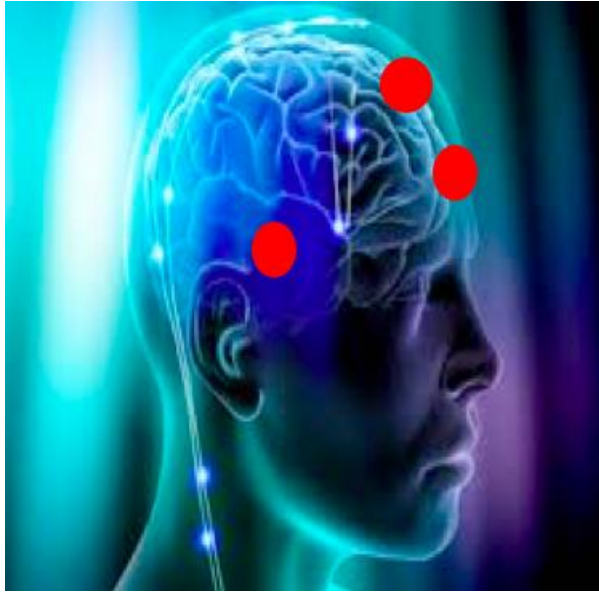
**Lateral
Amyotrophic
Sclerosis**

**TRIGGER
POINT:
Posterior
Parietal**



LATENCY, sec	DURATION, sec	STOMACH DILATATION, cm
less than 8	> 4	> 1 cm

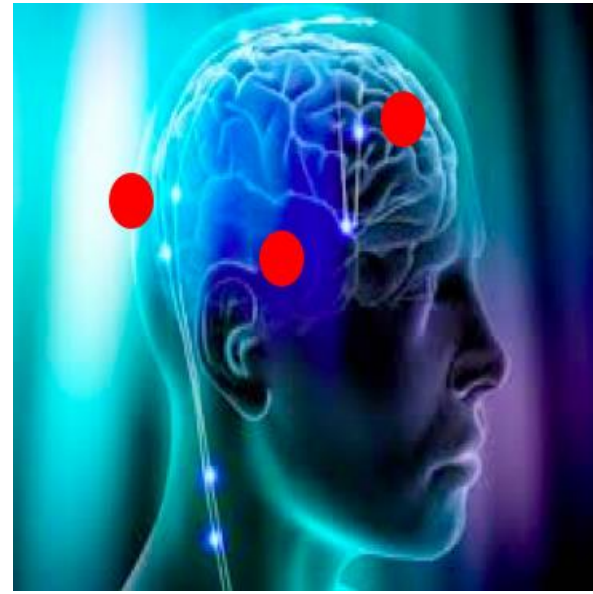
Alzheimer Disease



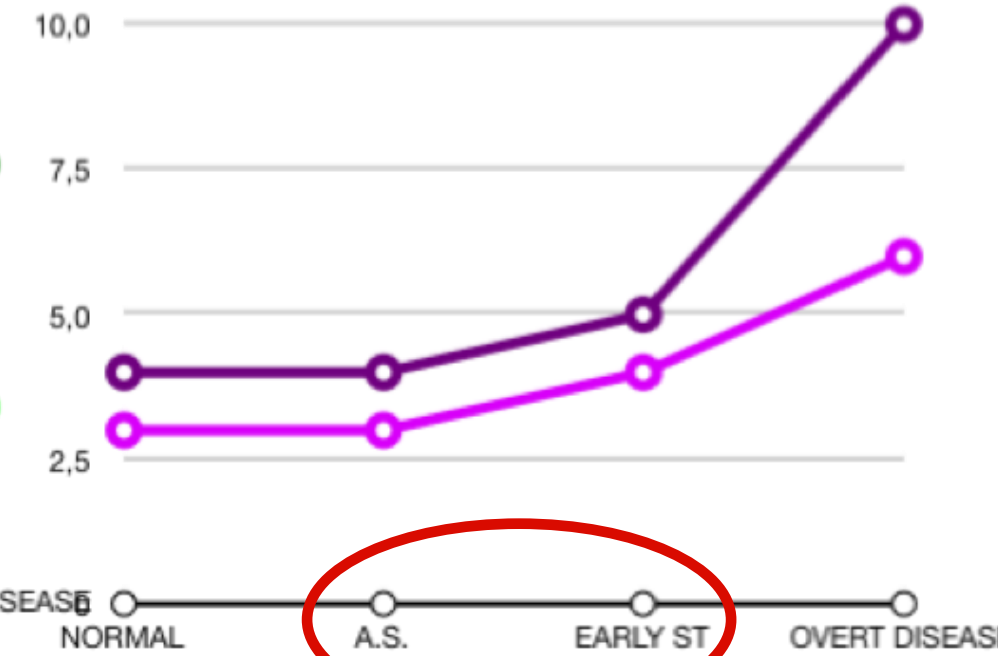
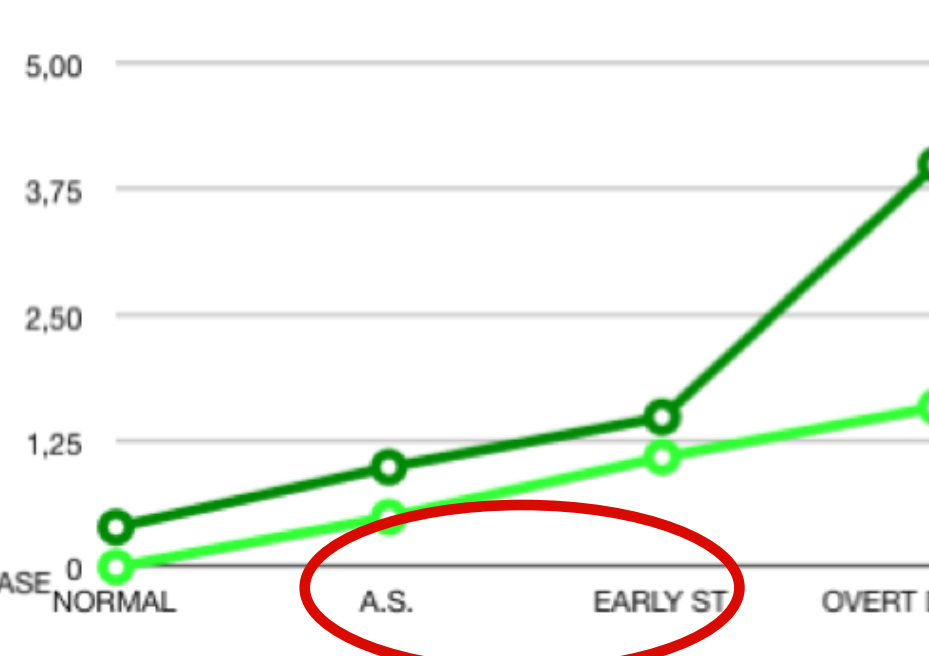
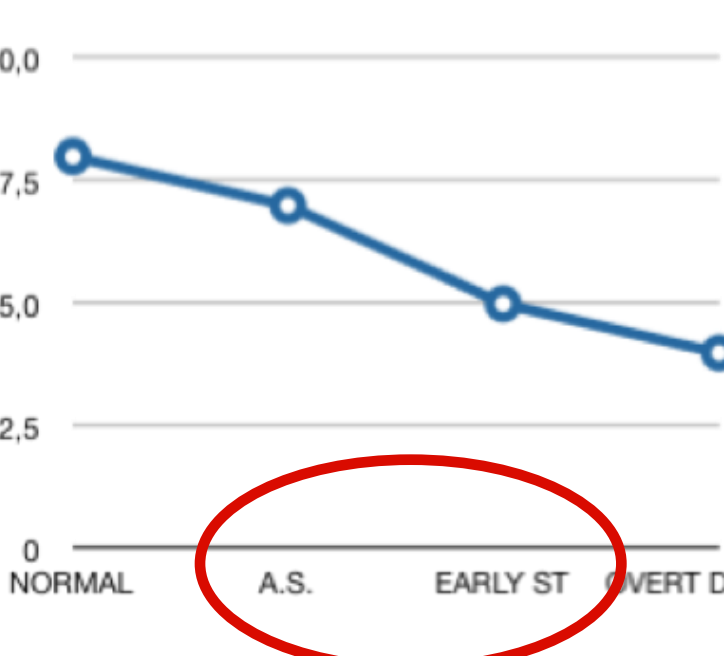
Parkinson's Disease



Multiple Sclerosis



Amyotrophic Lateral Sclerosis



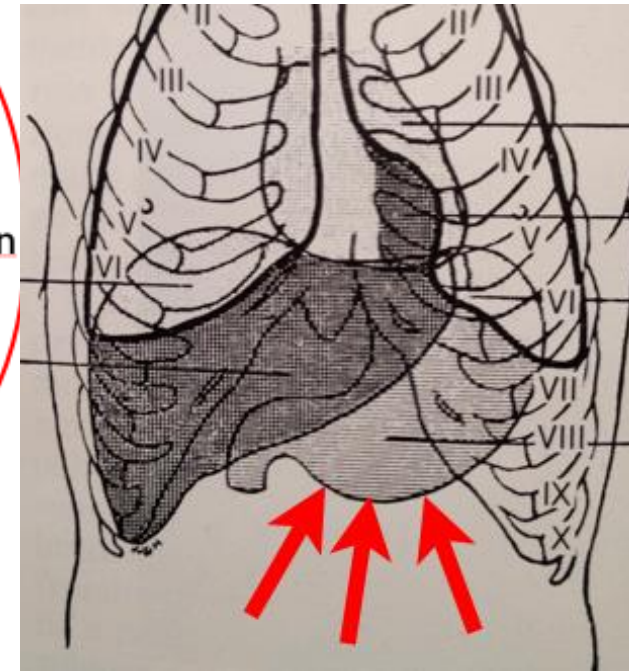
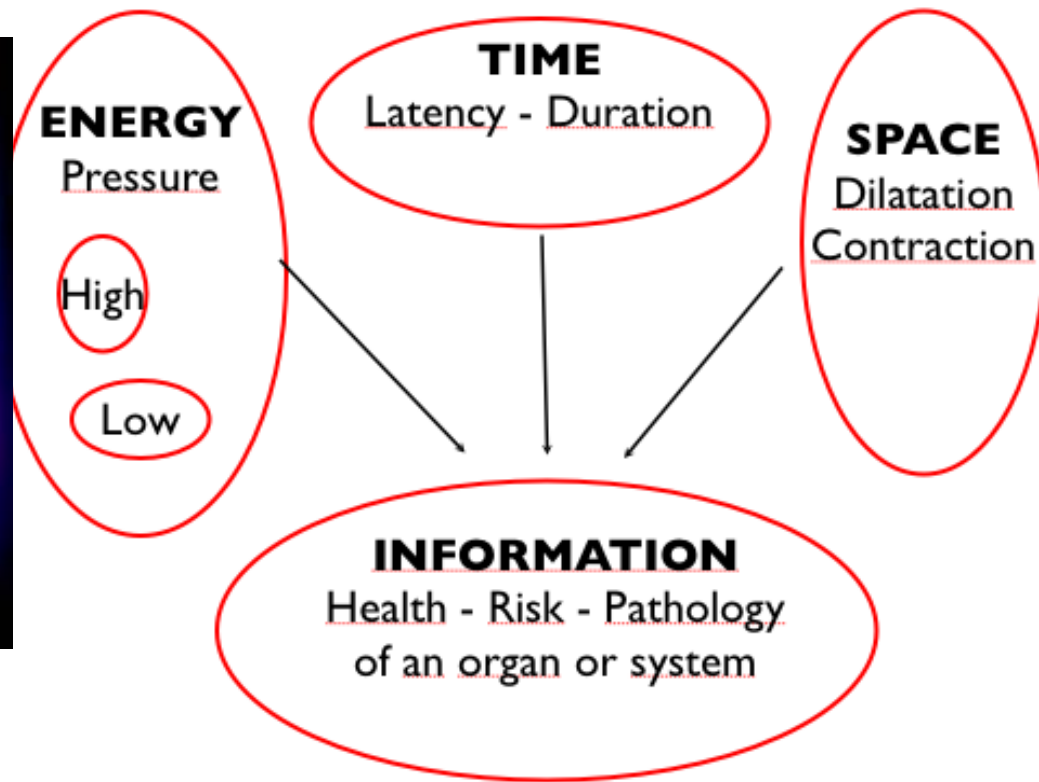
LATENCY sec	DURATION sec	STOMACH DILATATION cm
less than 8	> 4 sec	> 1 cm

*Biophysical Semeiotics is **NEVER** intended as substitute for the standard, clinical examination technique or an accurate and meticulous clinical history taking.*

In our preliminary experience, the observed numerical values of the spatial and temporal parameters of the heart - gastric and brain - gastric reflexes :

1. are characterized by highly specific and recurrent patterns

2. can be correlated with the progression of a cardiological or neurological disorder, from the aspecific symptoms stage (preclinical stage) to the clinical stage (when a clinical diagnosis has been established)



“ Traditional “ prevention strategies: to treat all the population ==> very high costs, possible risks and complications

“ Future “ prevention strategy: made and tailored on the single patient.

We might speculate that the heart - stomach and brain - stomach gastric reflexes will allow the physicians to achieve:

1. an early diagnosis
2. a timely treatment
3. a better evaluation of pharmacological treatments
4. and the primary prevention of neurological and cardiac disorders

Thank you

Preliminary Results from our Cardiology Team

CLINICAL CASE 1

65 years old male

Present Complaint: 9 months history of sudden onset episodes of *chest pain during physical efforts*, worsening over the past few weeks

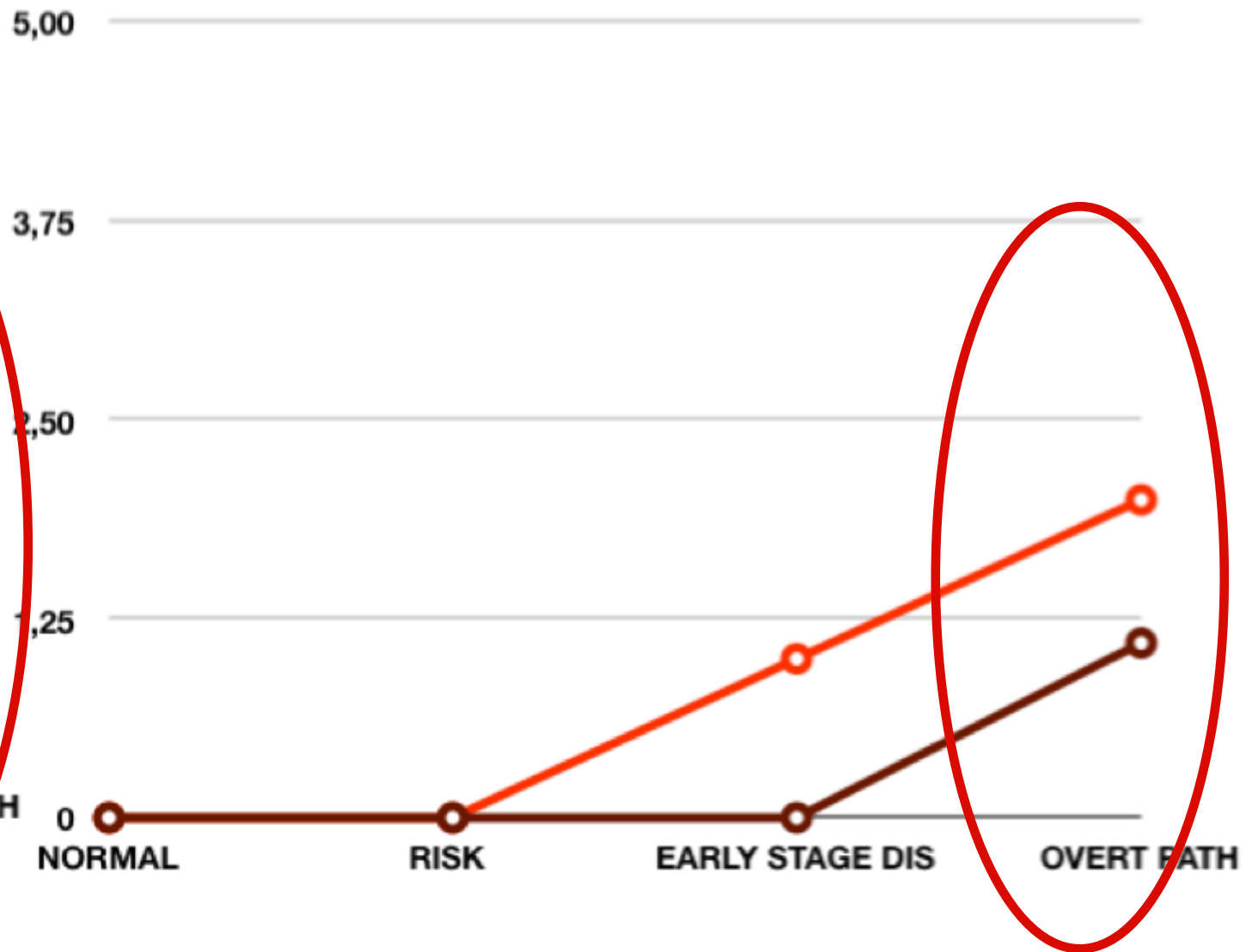
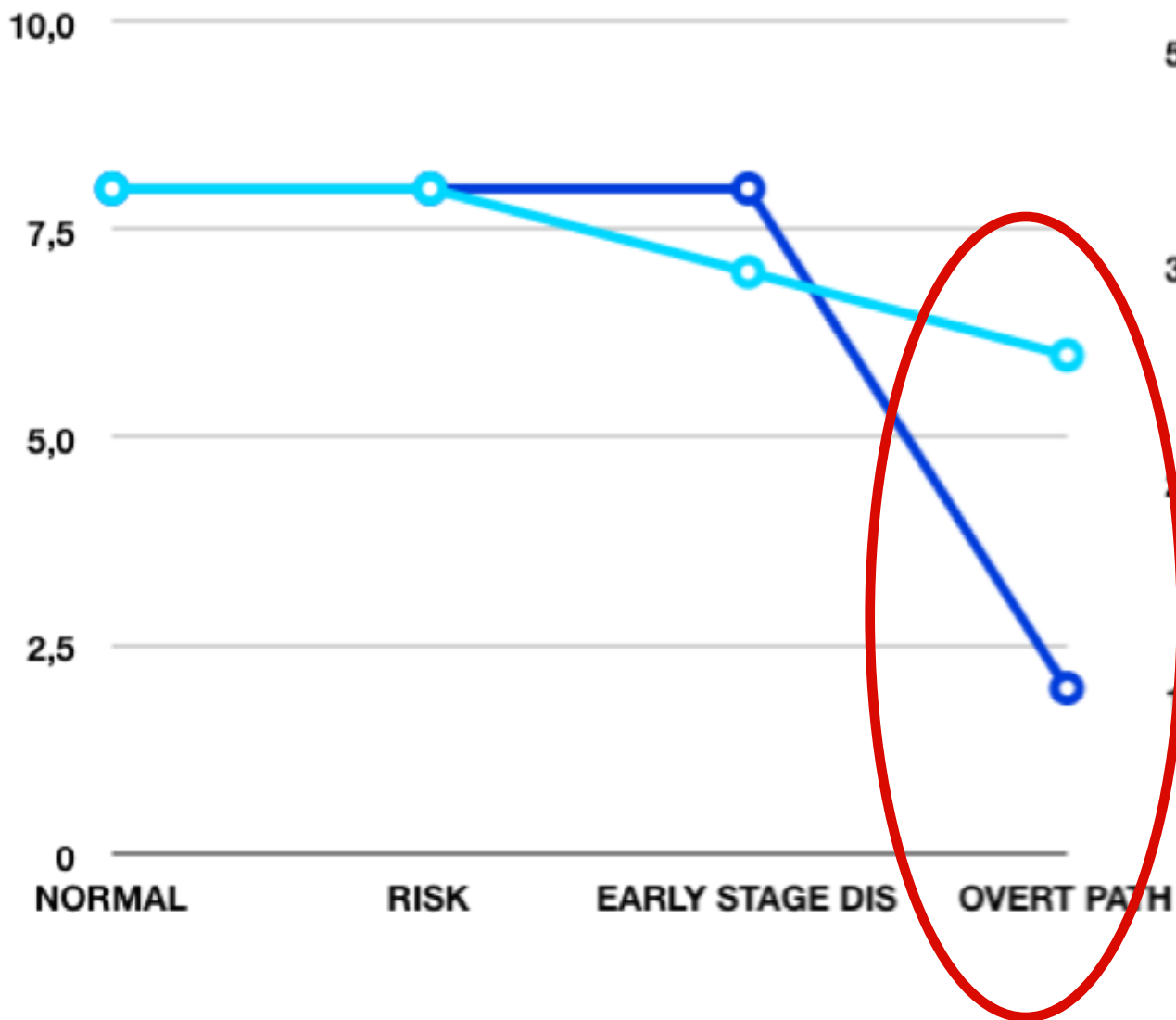
Investigations:

- ECG: Non-specific abnormalities
- Blood and myocardial Enzymes: NEGATIVE
- Myocardial scintigraphy NEGATIVE
- Echo stress cardiography NEGATIVE
- Holter ECG 24 hrs: NEGATIVE

Heart-Stomach Reflex (medium-low pressure stimulus)

LATENCY min LATENCY max

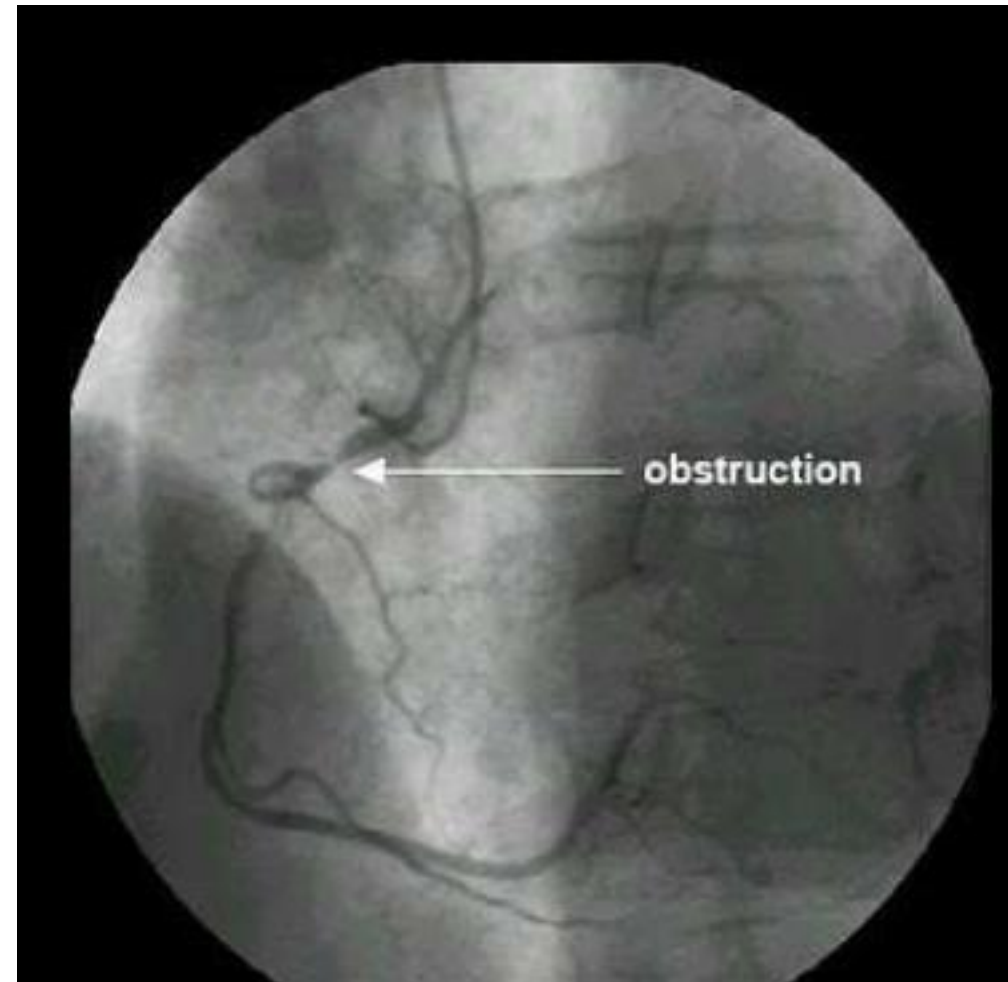
CONTRACTION min CONTRACTION max



Latency: < 8

Contraction: 3 cm

Coronary Angiography: *Severe trivasal coronary artery stenosis*



pressioni	pre angio	120/0-6
	post angio	120/0-10
	aorta	120/70


CORONARIA SINISTRA:
Tronco comune: esente da stenosi.
IVA: diffusamente infiltrata e calcifica, lunga stenosi 30% al tratto prossimale, successiva stenosi 50-60% al tratto medio letto a valle esente da lesioni.
Circonflessa: di buon calibro ed estensione, stenosi critica ostiale e successiva stenosi subocclusiva al tratto medio, letto a valle costituito da un esteso ramo marginale di buona qualità.

CORONARIA DESTRA: dominante, stenosi critica ostiale e successiva stenosi critica al secondo segmento, letto a valle di discreta qualità rivisto a attraverso circolo collaterale omocoronarico.

CONCLUSIONI

Lieve ipertrofia del ventricolo sinistro.
Malattia trivasale severa con indicazioni alla rivascolarizzazione chirurgica.

**FALSO NEGATIVO
DELL'ITER
DIAGNOSTICO
TRADIZIONALE**



CLINICAL CASE 2

JULY 2010

67 years old male, smoker (30 cigarettes / day)

Present Complaint: detection of systolic murmur by his GP during routine clinical assessment

Past Medical History: Arterial hypertension, dyslipidemia

DM decompensated (9% glycosylated hemoglobin)

The patient is asymptomatic for angina-palpitations or shortness of breath and does not complain of any functional limitation

JULY 2010

ECG: non specific abnormalities

Echocardiogram: Mild Left Ventricular Hypertrophy. Mitral and tricuspid insufficiency, Very mild hypokinesia of the latero-apical wall

Myocardial scintigraphy: Negative for ischemia.

Patient at high cardiovascular risk (> 30% at 10 years)

JULY 2011

The patient is still asymptomatic for angina-palpitations or shortness of breath and does not complain of any functional limitation

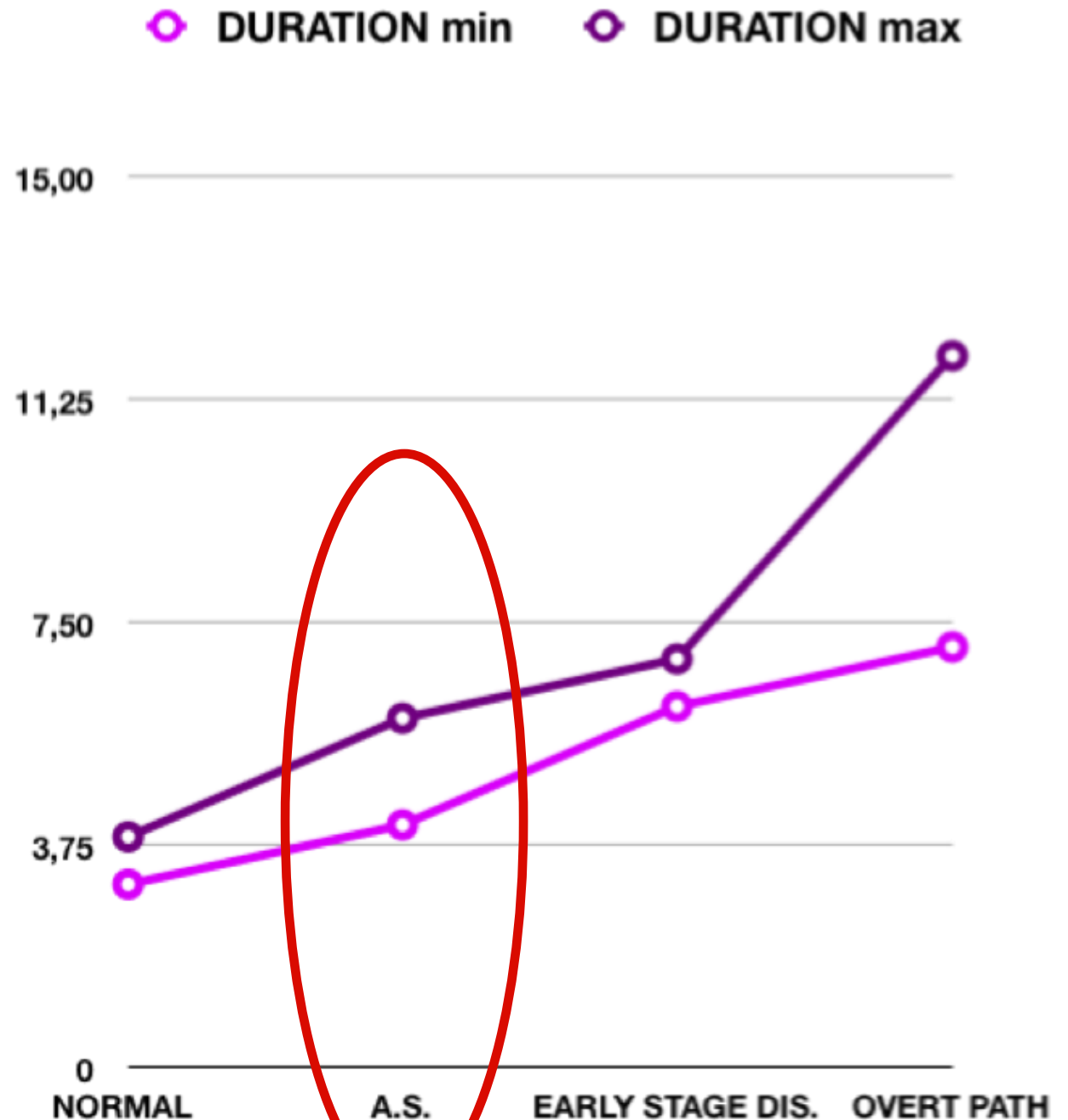
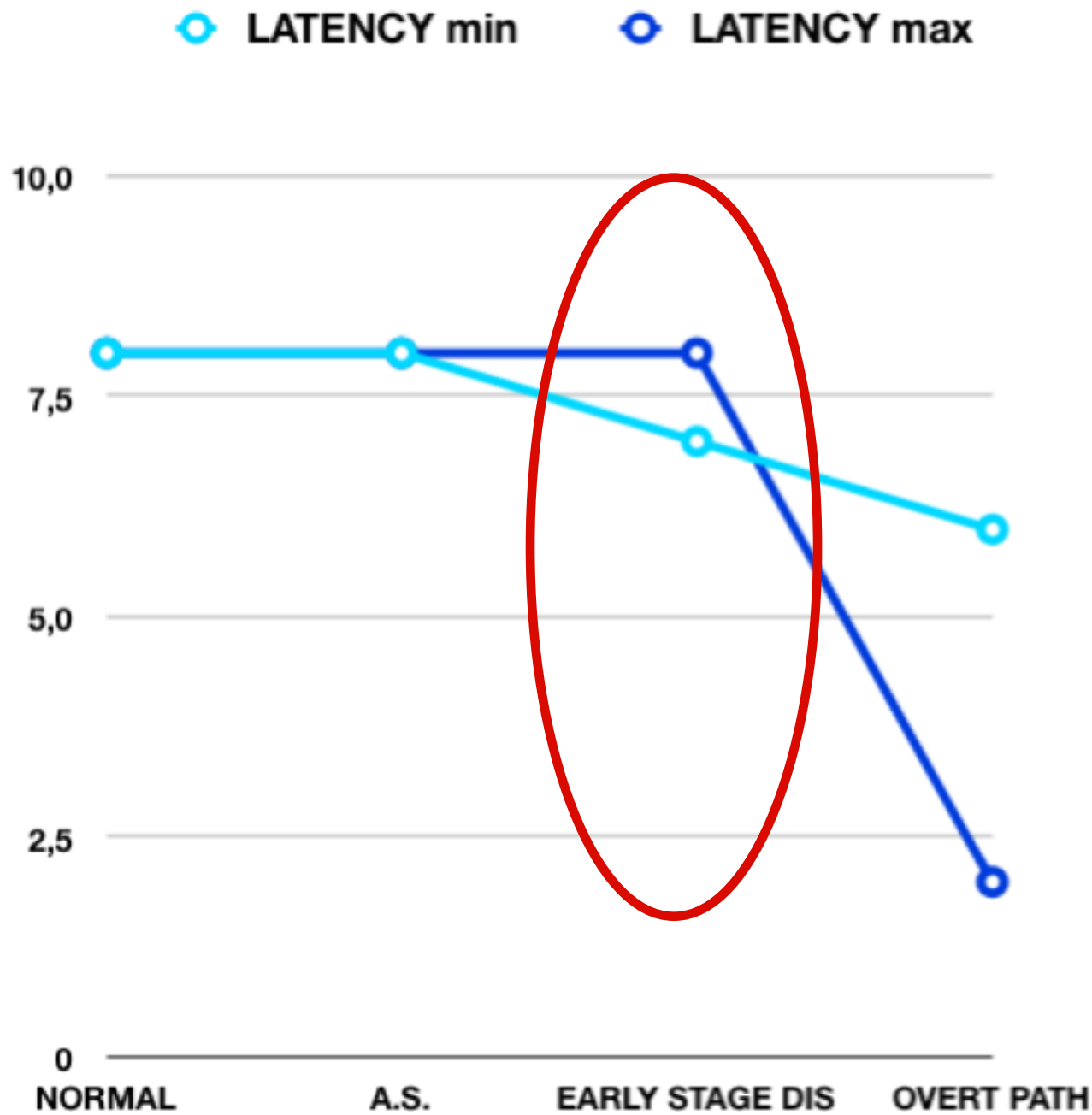
The patient is on hypoglycaemic therapy, ASA, anti-hypertensive drugs, statins.

Diabetes: improved compensation (7.2% glycosylated hemoglobin)

Blood pressure is under well controlled

The patient is still smoking 30 cigarettes / day

JULY 2011



Latency < 8 sec
Heart-MEDIUM PRESSURE STIMULUS ==> gastric patterns

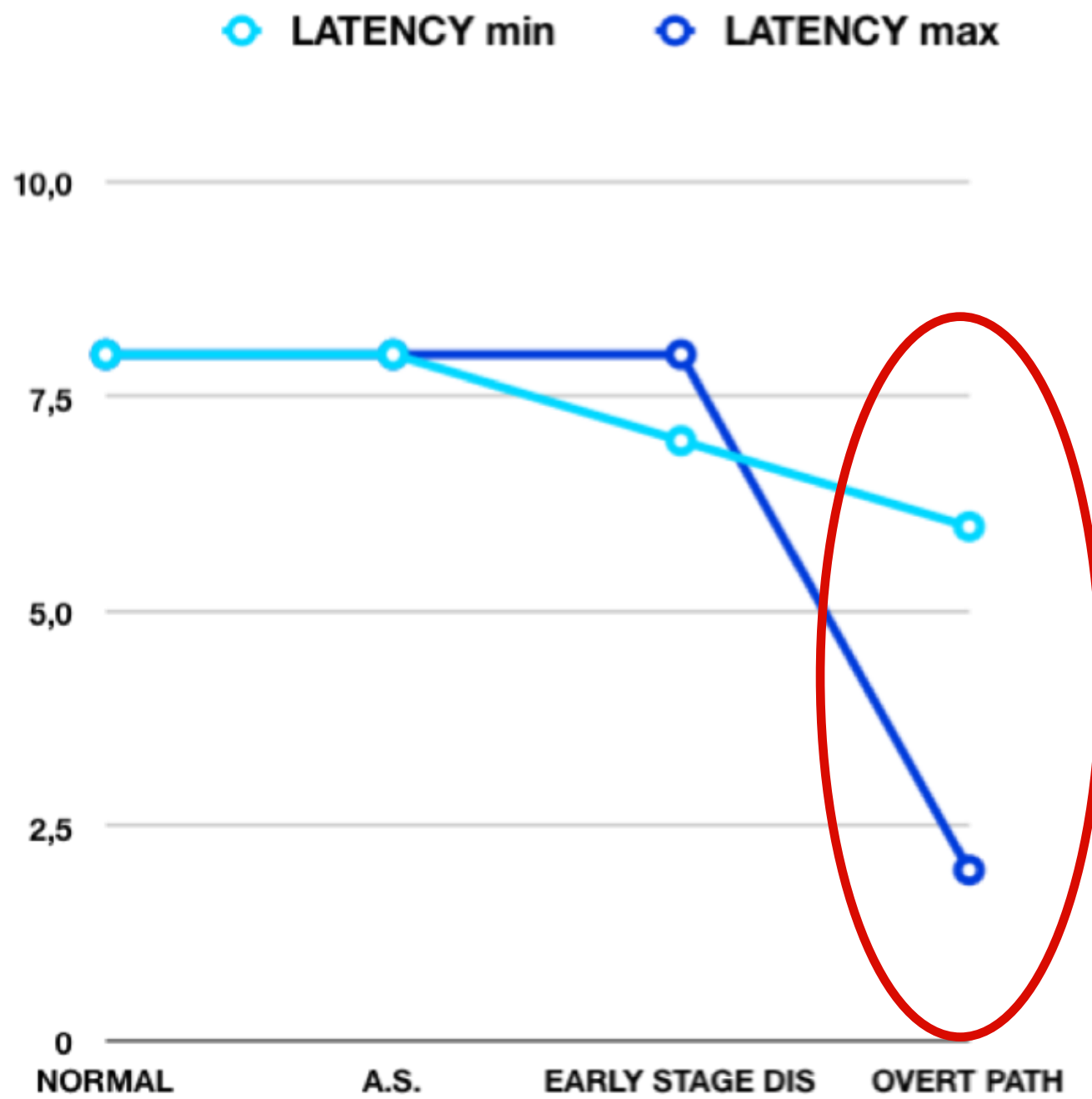
Duration > 4

MAY 2012

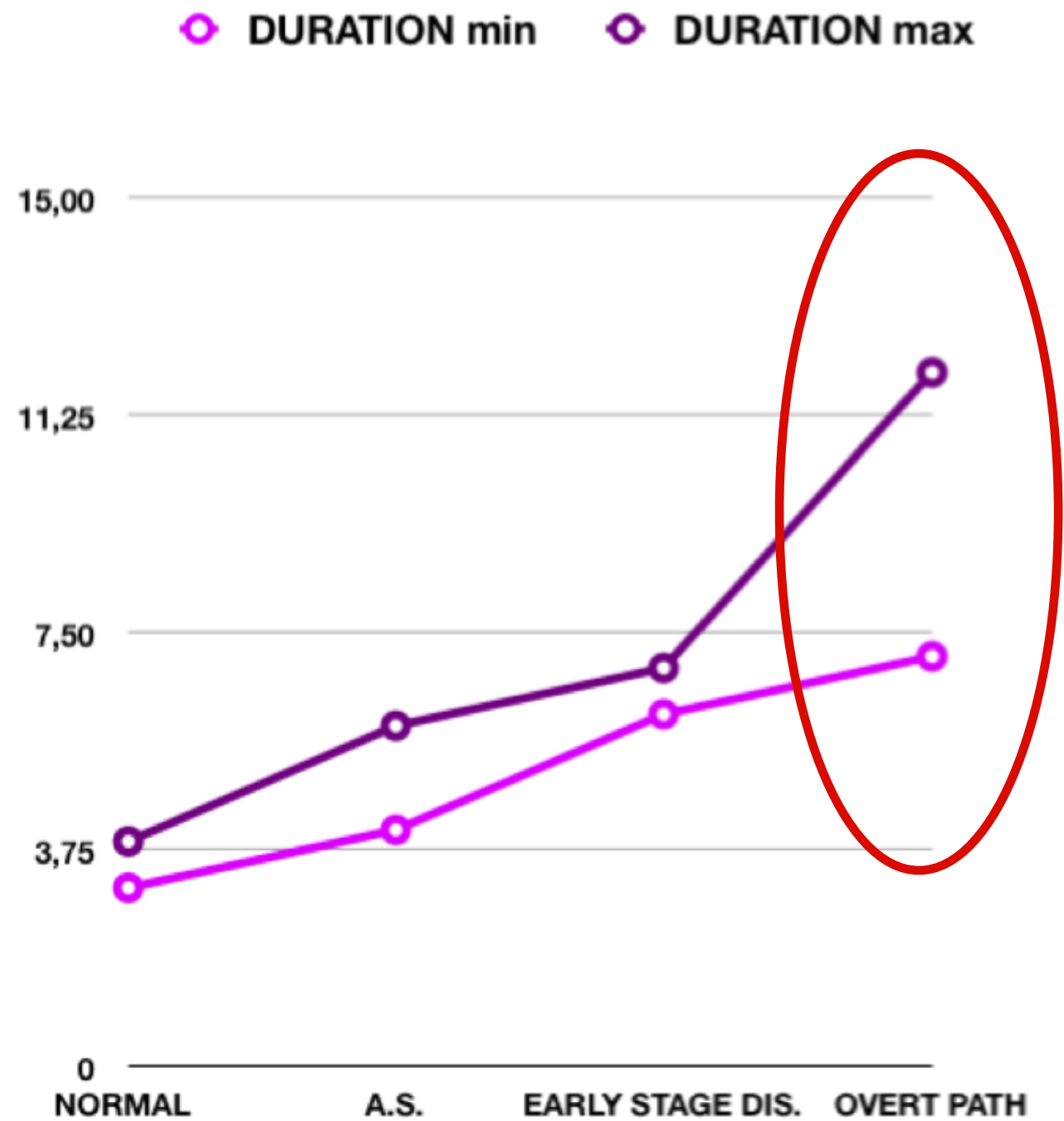
Present Complaint: 3 days history of sudden onset epigastric pain and persistent fatigue.

ECG : evidence of myocardial infarction

Cardiac Angiography: evidence of obstructive pathology.

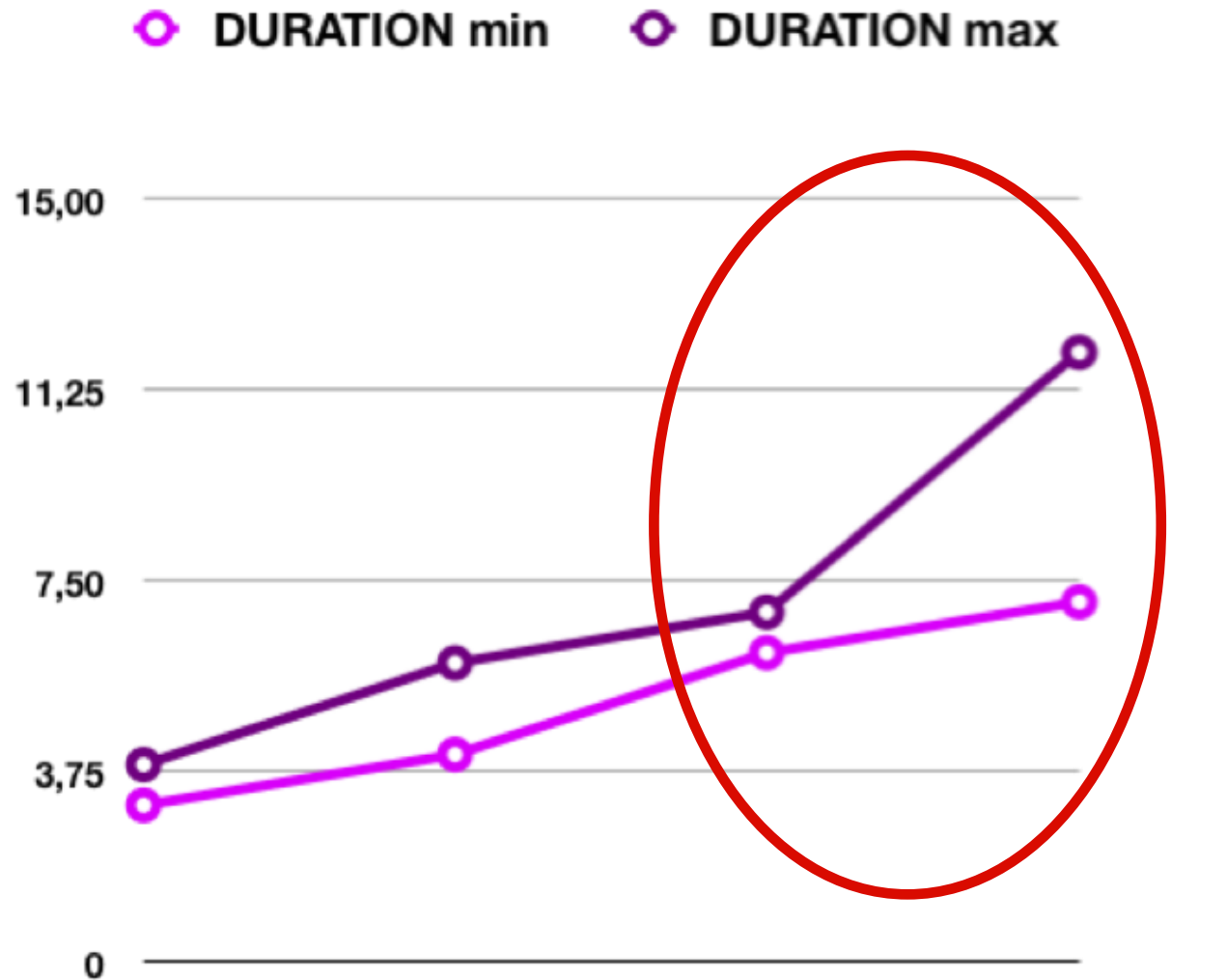
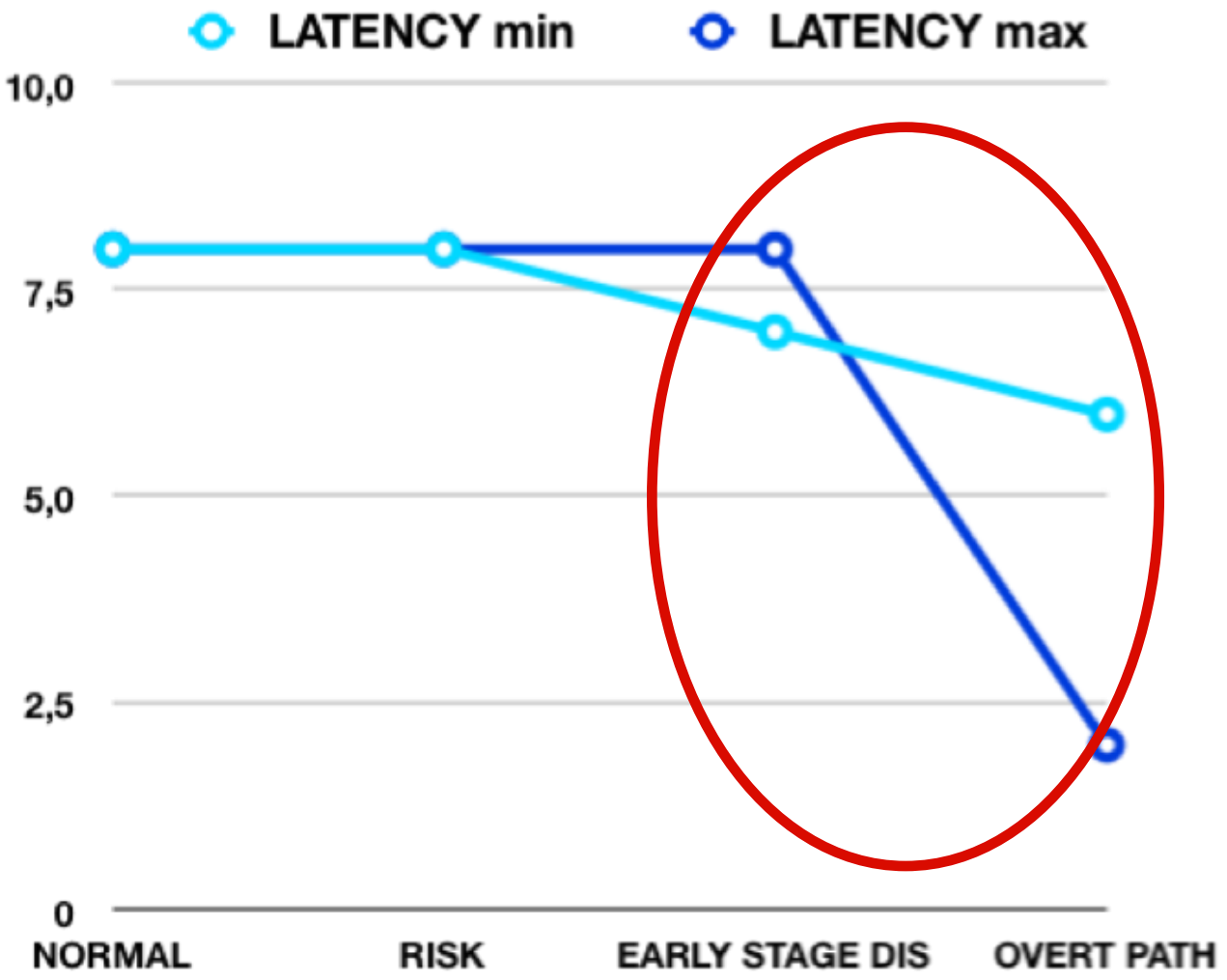


Latency < 5 sec



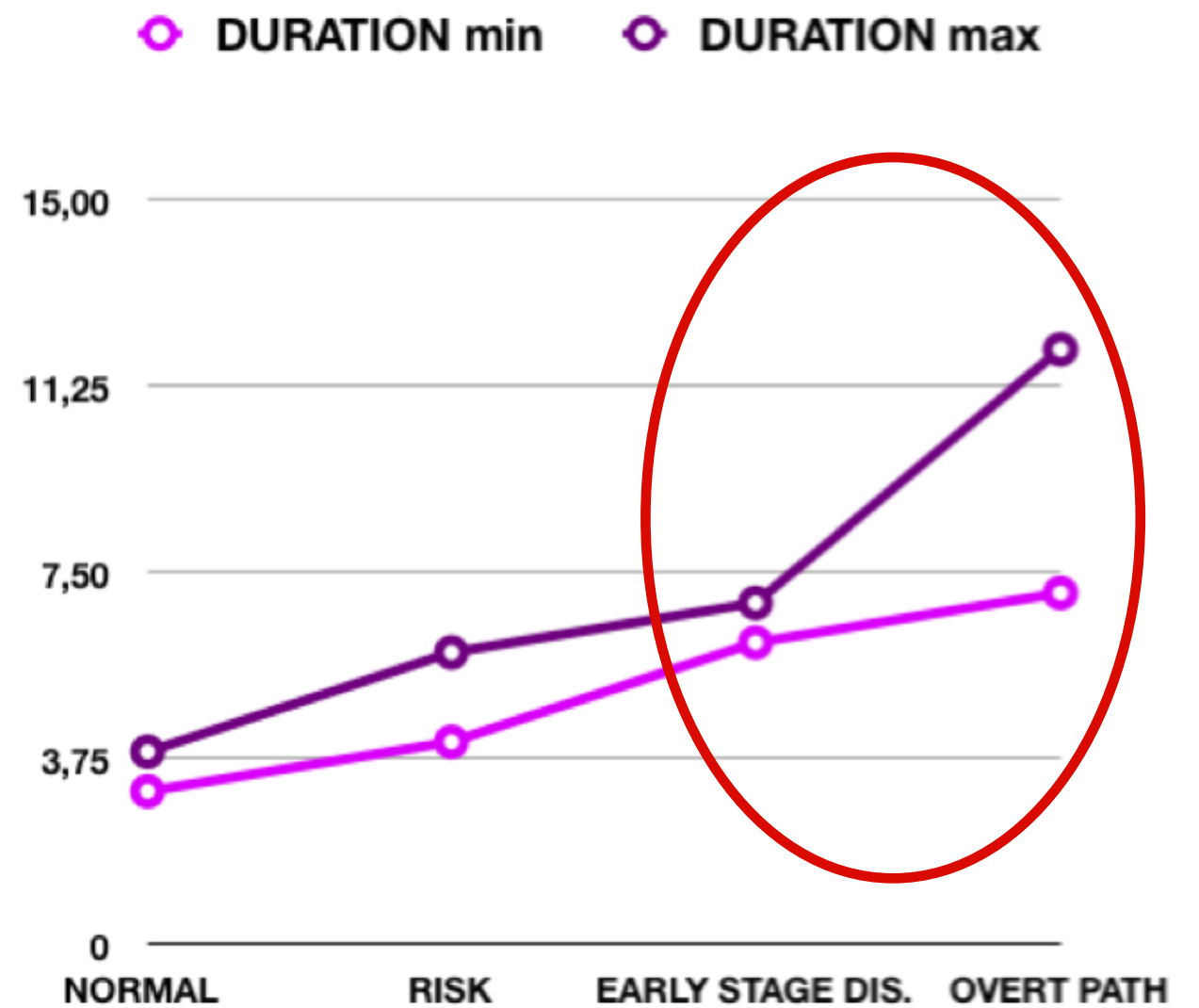
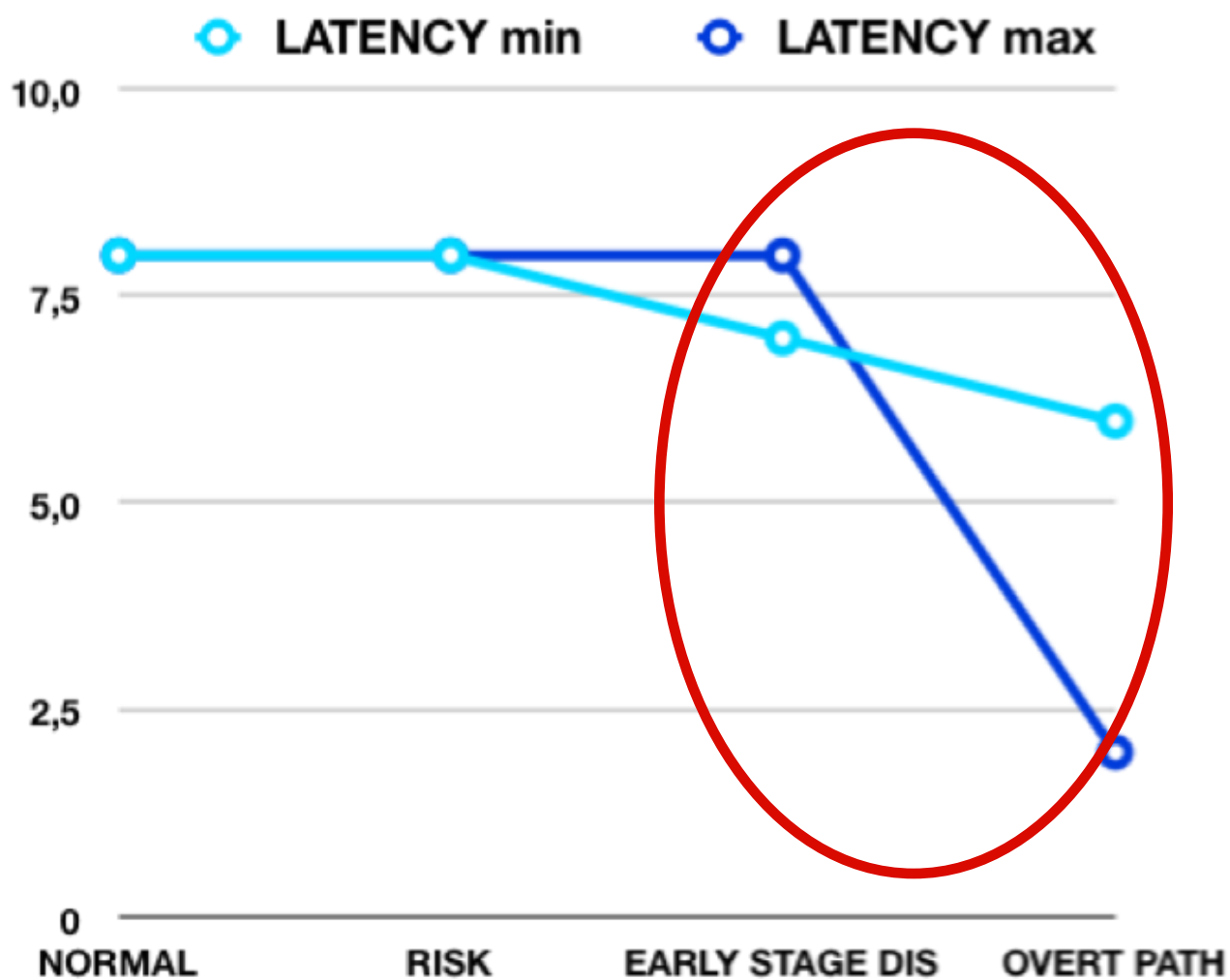
Duration > 8

Preliminary Conclusions from our Cardiology Team



Heart-MEDIUM PRESSURE STIMULUS ==> gastric patterns

Nearly the totality of patients with Angiographic Coronary evidence of obstructive coronary disease showed worsening of the Latency and Duration parameters of the Heart-Stomach Reflex (medium-low pressure stimulus)



Heart-Stomach Reflex (medium-low pressure stimulus)

From our series of patients, emerged preliminary evidence that Biophysical Semeiotics has been able to identify those symptomatic patients who underwent investigations the results of which was negative (“ false negative “)

Biophysical Semeiotics has been useful in correctly identifying a pathological condition when other conventional investigations were negative