

THE OTHER SCIENTIFIC WAY TO MEASURE THERAPEUTIC EFFECT

Rik Hoste DO

**“Find and remove the cause,
then the effect will disappear.”**

Still DO 1910

“Osteopathic treatment is scientific in that it recognizes the relation between cause and effect in disease, and seeks to remove the cause rather than to treat the symptoms - the effect of disease.”

Smith DO 1919

**CAUSE - EFFECT frame of thinking
belongs to a REDUCTIONISTIC concept**



**OSTEOPATHIC MEDICINE
belongs to a HOLISTIC concept**



OSTEOPATHIE
College Sutherland

Specimen #	Control Run Number	Fig. 1	LabCorp	V. 1.28		
Facility	Missi Service	Total Time Volume	Report Status	Client Information		
Date Collected	Time Collected	Date Entered	Date Reported			
08/22/20	09:56	08/22/20	08/23/20			
Patient ID Number	Patient Phone Number	Patient Name	Account			
R0543			2712375			
Patient Name	Sex	Date of Birth	Direct Laboratory Services			
	M	12/10/86	300 Maritime Plaza Suite 321			
			Shackelford, VA 23086			
Patient Address			953-624-9386			
			UFPS: 133212729			
Comments			PHY NAME: DAVIS, A			
PATIENT AGE:	32.4 / 04 / 48					
Test Requested	CMF14-LEP12P-FISH-SAC-ICRCDP8					
TEST	RESULT	FLAG	UNITS	REFERENCE INTERVAL	LO	HU
Cholesterol, Serum	80		mg/dL	65-99	01	
Uric Acid, Serum	6.0		mg/dL	2.4-8.2	01	
BUN	18		mg/dL	8-26	01	
Creatinine, Serum	1.74	HIGH	mg/dL	0.76-1.27	01	
eGFR African American	49	LOW	ml/min/1.73	>95	01	
eGFR African American	59	LOW	ml/min/1.73	>95	01	
<small>Note: Estimated reduction for 3 months or more in an eGFR <90 ml/min/1.73 m² defines CKD. Patients with eGFR values <90 ml/min/1.73 m² must also have CKD evidence of persistent proteinuria to present. Additional information may be found at www.kidney.org.</small>						
BUN/Creatinine Ratio	10		mg/dL	8-27	01	
Sodium, Serum	136		mmol/L	135-145	01	
Potassium, Serum	4.2		mmol/L	3.5-5.2	01	
Chloride, Serum	103		mmol/L	97-108	01	
Carbon Dioxide, Total	28		mmol/L	20-32	01	
Calcium, Serum	9.0		mg/dL	8.7-10.2	01	
Phosphate, Serum	3.4		mg/dL	2.5-4.5	01	
Protein, Total, Serum	6.4		g/dL	6.0-8.5	01	
Albumin, Serum	3.7		g/dL	3.5-5.5	01	
Globulin, Total	2.7		g/dL	1.5-4.5	01	
ASAT Ratio	1.4		mg/dL	1.1-2.5	01	
Bilirubin, Total	0.9		mg/dL	0.1-1.2	01	
Alkaline Phosphatase, S	41		U/L	28-100	01	
ALT	223		U/L	30-200	01	
ALT (SGPT)	40	HIGH	U/L	0-40	01	
ALT (SGPT)	41	HIGH	U/L	0-55	01	
AST	10		U/L	0-40	01	
Iron, Serum	174	HIGH	ug/dL	60-155	01	
Cholesterol, Total	146		mg/dL	120-199	01	
Triglycerides	45		mg/dL	0-149	01	
HDL Cholesterol	31	LOW	mg/dL	>59	01	
<small>According to ATP-III Guidelines, HDL-C <59 mg/dL is considered a negative risk factor for CHD.</small>						
LDL Cholesterol Calc	106	HIGH	mg/dL	0-99	01	
T. Chol/HDL Ratio	4.7		ratio units	0.5-5.0	01	

FINAL REPORT
R0543 Sup 0001 R32000 6:30:00AMET

REDUCTIONISM
quantitative data



HOLISM
qualitative data

MSQ: Migraine-Specific Quality-of-Life Questionnaire
Further Investigation of the Factor Structure

Preeti Jhingran¹, Sonia M. Davis,² Lisa M. LaVange,² David W. Miller¹ and Ronald W. Helms³

- 1 Glaxo Wellcome Inc., Research Triangle Park, Durham, North Carolina, USA
- 2 Quintiles Inc., Research Triangle Park, Durham, North Carolina, USA
- 3 Rho Inc. and Department of Biostatistics, University of North Carolina, Chapel Hill, North Carolina, USA

REDUCTIONISM

measurable influences affect measurable outcomes



HOLISM

a whole consists of multiple interdependent segments and cannot be broken down into separate measurable segments

REDUCTIONISM

symplifying **the situation**



HOLISM

overviewing **the situation**



REDUCTIONISM

frame of reference = the object



HOLISM

frame of reference = the subject

REDUCTIONISM

concept of truth



HOLISM

concept of probability and meaningfulness



- **Why do we so often use this cause-effect way of thinking?**
- **What is the meaning of holism?**
- **What are the consequences of a holistic concept for**
 - **Scientific osteopathic research?**
 - **Osteopathic training?**
 - **Osteopathic diagnostics?**
 - **Osteopathic treatment?**

CAUSE-EFFECT way of thinking



tunnel vision
easiest solution

It works as long as you are in the tunnel!

OSTEOPATHIC MEDICINE within a HOLISTIC concept



SCIENTIFIC ?

Criteria of 'science'



logical - objective - systematic

Logical



osteopathic medicine is based on
ANATOMY, PHYSIOLOGY, EMBRYOLOGY, ...

Objective



what we treat is objective
(patient, structures, ...)

Objective



the parameter (**mobility**) we use, is often not
testable
(**function – dysfunction**)

Objective

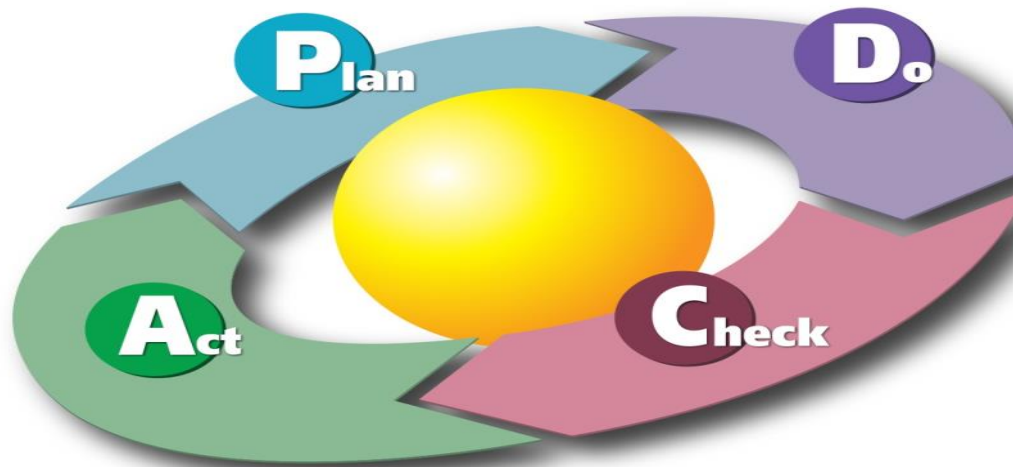
before treatment



after treatment

effects and effectiveness are testable

Systematic



**osteopathic diagnosis and treatment
are conducted systematically**

What is the meaning of holism in relation to science?

How do we define health and disease in a holistic scientific concept?

Defining health and disease



**by means of
standards**

Standards in a reductionistic concept

BLOOD TEST DETECTS
ONSET OF ALZHEIMER'S
a Decade Early



blood pressure, cholesterol, liver enzymes, ...

Standards in osteopathic medicine



ptosis of the kidney, hypertonia of the piriformis,
external rotation of the left temporal, ...

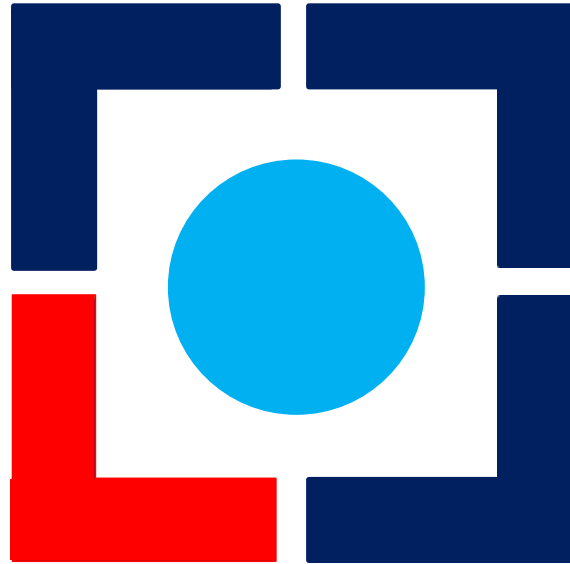
Standards fit in a cause-effect relationship



HOLISM is more than

- standards
- a full body diagnosis
- treating structures that are not directly involved in the complaints of the patient

Holism is the whole



the WHOLE is the PATIENT

patient = complex adaptative system



chaotic
not calculable

Holism for SCIENTIFIC OSTEOPATHIC RESEARCH

- Basic Research
- Clinical Research

BASIC RESEARCH concerns TECHNIQUES for

- diagnosis
- treatment



BASIC RESEARCH in OSTEOPATHIC DIAGNOSTICS

reliability studies



focus: intra-examiner reliability
(same patient, same structure, same osteopath)

BASIC RESEARCH in THERAPEUTIC TECHNIQUES

effects of osteopathic techniques

Can we influence a certain parameter through
a certain **MANUAL TECHNIQUE**?



SHAM TECHNIQUE

CLINICAL RESEARCH in OSTEOPATHIC TREATMENT

effectiveness of the whole treatment



PRAGMATIC RCT

CLINICAL RESEARCH in OSTEOPATHIC TREATMENT

osteopathic treatment (**black box design**)

versus

no treatment - standard treatment

SHAM TREATMENT DOES NOT EXIST

Holism in OSTEOPATHIC EDUCATION

- No modular **training**
- **Focus on high level background and knowledge of basic sciences**
- **Focus on the principles of the techniques, and not on the technical aspect only**



Holism in OSTEOPATHIC DIAGNOSIS

symptoms belong

- partly to the disease (~ differential diagnosis)
- partly to the patient

Holism in OSTEOPATHIC DIAGNOSIS

inhibition tests

≠ defining the cause

= defining what to do NOW for this specific patient
to make him/her function better!

what will I treat?

Holism in OSTEOPATHIC TREATMENT

how will I treat?

- direct **or** indirect **techniques**
- global **or** localized **techniques**

Holism in OSTEOPATHIC TREATMENT

how will I treat?



parameter = typology of the patient

OSTEOPATHIC MEDICINE

WHERE
SCIENCE
MEETS
HOLISME

Rik Hoste DO

www.osteopaatbrugge.be – www.college-sutherland.nl – www.runningandmore.be