

**Erasmus MC**

Universitair Medisch Centrum Rotterdam



# Nabespreking Reuma en Collageen

18 november 2014

Marco Schreurs  
Immunologie, Erasmus MC

# SKML Reuma en Collageen

- \* Rondzendingen 2012.1 t/m 2014.1
- \* Analyten
  - Reuma: reumafactor en anti-CCP
  - Collageen: ANA screen, anti-dsDNA, ENA typering
- \* 30 monsters per analyt
- \* Resultaten kwalitatieve en kwantitatieve rapportage

# Reumafactor en anti-CCP (ACPA)

ARTHRITIS & RHEUMATISM  
Vol. 62, No. 9, September 2010, pp 2569–2581  
DOI 10.1002/art.27584  
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## Arthritis & Rheumatism

An Official Journal of the American College of Rheumatology  
www.arthritisrheum.org and www.interscience.wiley.com

### 2010 Rheumatoid Arthritis Classification Criteria

An American College of Rheumatology/European League Against Rheumatism  
Collaborative Initiative

score:

<b>B. Serology (at least 1 test result is needed for classification)††</b>	
Negative RF <i>and</i> negative ACPA	0
Low-positive RF <i>or</i> low-positive ACPA	2
High-positive RF <i>or</i> high-positive ACPA	3

†† Negative refers to IU values that are less than or equal to the upper limit of normal (ULN) for the laboratory and assay; low-positive refers to IU values that are higher than the ULN but  $\leq 3$  times the ULN for the laboratory and assay; high-positive refers to IU values that are  $>3$  times the ULN for the laboratory and assay. Where rheumatoid factor (RF) information is only available as positive or negative, a positive result should be scored as low-positive for RF. ACPA = anti-citrullinated protein antibody.

**Definition of the serologic categories.** ACPA and IgM-RF levels are usually reported in IU. Based on the

# SKML Reuma

\* Circa 95 deelnemers

\* Methode reumafactor:

- turbidimetrie (RF totaal)
- nefelometrie (RF totaal)
- EliA IgM (RF IgM)
- ELISA (RF totaal/IgM)

EliA IgM: 14 > 19 > 23 > 29 > 27 deelnemers

\* Methode anti-CCP:

- EliA IgG
- ELISA
- luminoscentie/CLIA

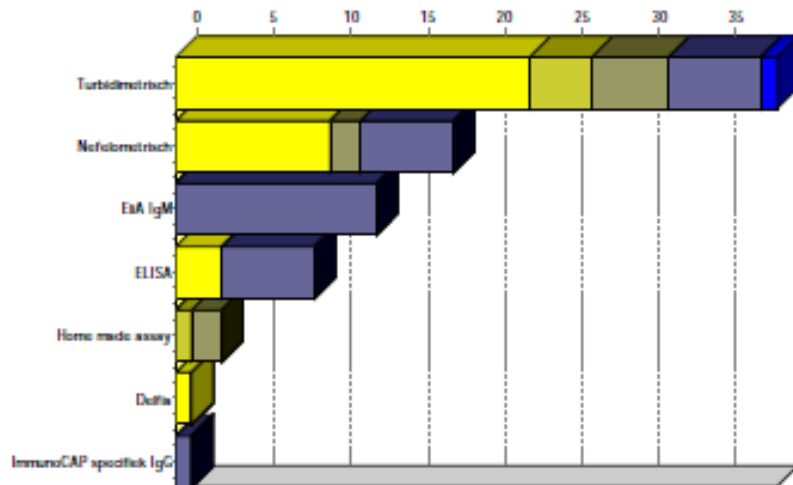
# Reuma: reumafactor

\* 18/30 positief, w.v. 4 zwak positief

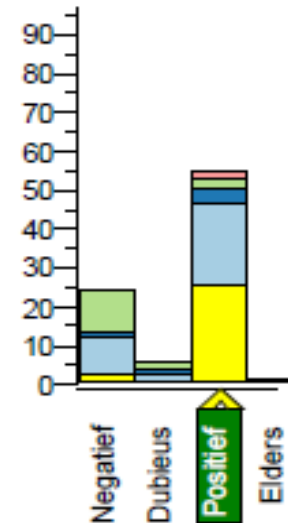
\* consensus bij negatief en positief, niet bij zwak positief

2012.1E

Interpretaties:



2014.1D



Negatief
  Dubieus
  Zwak Positief
  Positief
  Sterk Positief

EIA IgM

Turbidimetrisch

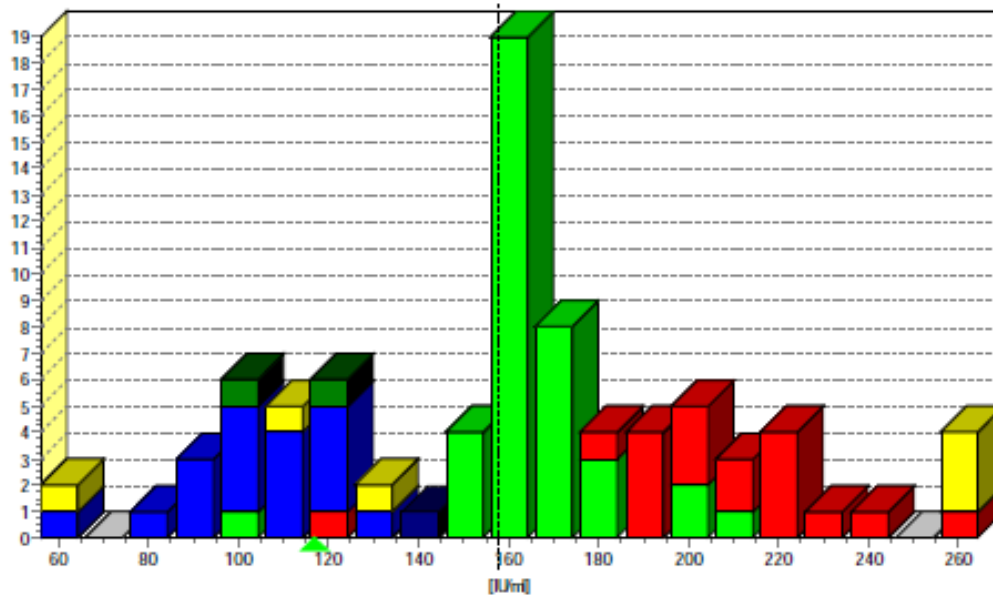
ELISA

Nefelometrisch

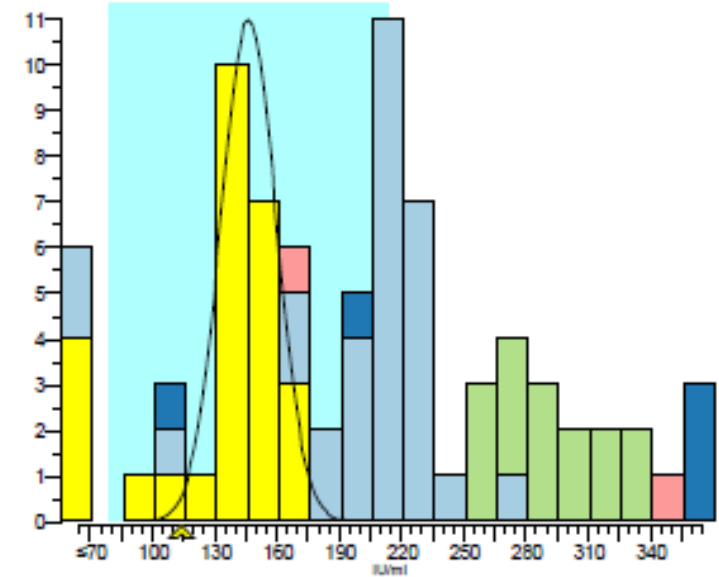
# Reuma: reumafactor

\* kwantitatief resultaat methode afhankelijk:

2012.2E



2014.1 F



EliA IgM

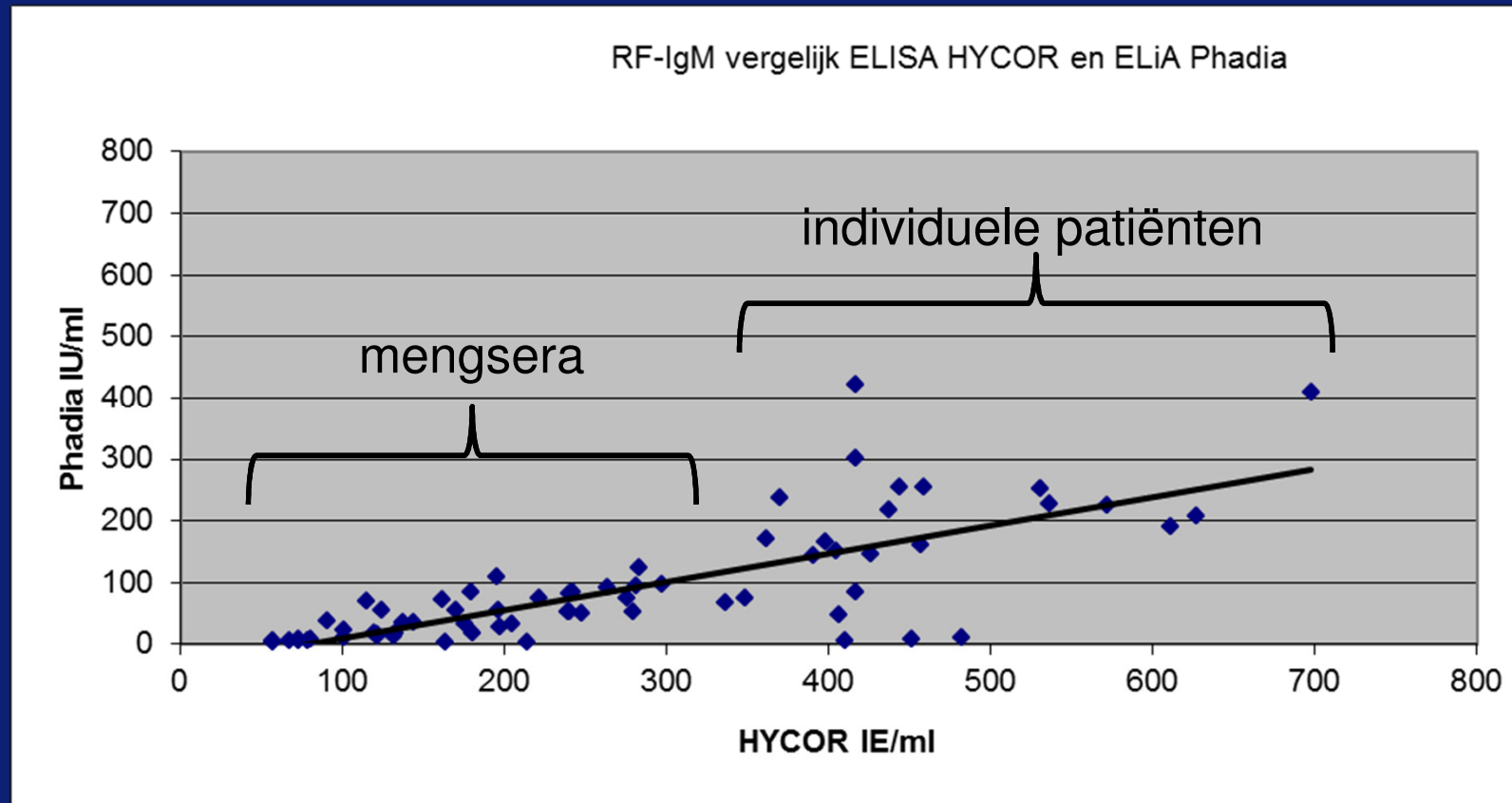
Turbidimetrisch

ELISA

Nefelometrisch

# Reumafactor IgM

EliA vs. ELISA, zelfde WHO kalibrator



Cut-off Hycor ELISA: 24 IU/ml

Cut-off ELiA: 5 IU/ml

Geen harmonisatie,  
ondanks kalibratie

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## Toward a Data-Driven Evaluation of the 2010 American College of Rheumatology/European League Against Rheumatism Criteria for Rheumatoid Arthritis

Is It Sensible to Look at Levels of Rheumatoid Factor?

M. P. M. van der Linden,<sup>1</sup> M. R. Batstra,<sup>2</sup> L. E. Bakker-Jonges<sup>2</sup> on behalf of the Foundation  
for Quality Medical Laboratory Diagnostics, J. Detert,<sup>3</sup> H. Bastian,<sup>3</sup> H. U. Scherer,<sup>4</sup>  
R. E. M. Toes,<sup>1</sup> G.-R. Burmester,<sup>3</sup> M. D. Mjaavatten,<sup>5</sup> T. K. Kvien,<sup>5</sup>  
T. W. J. Huizinga,<sup>1</sup> and A. H. M. van der Helm-van Mil<sup>1</sup>

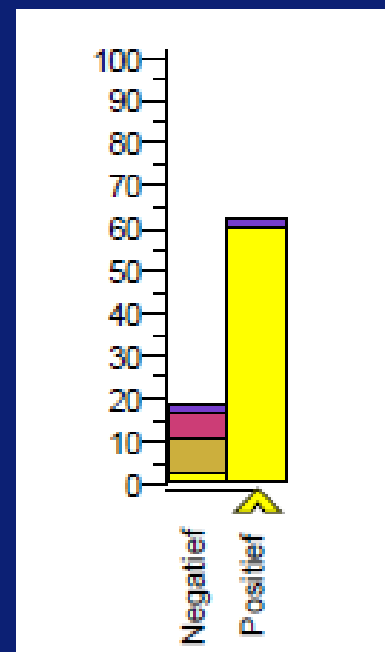
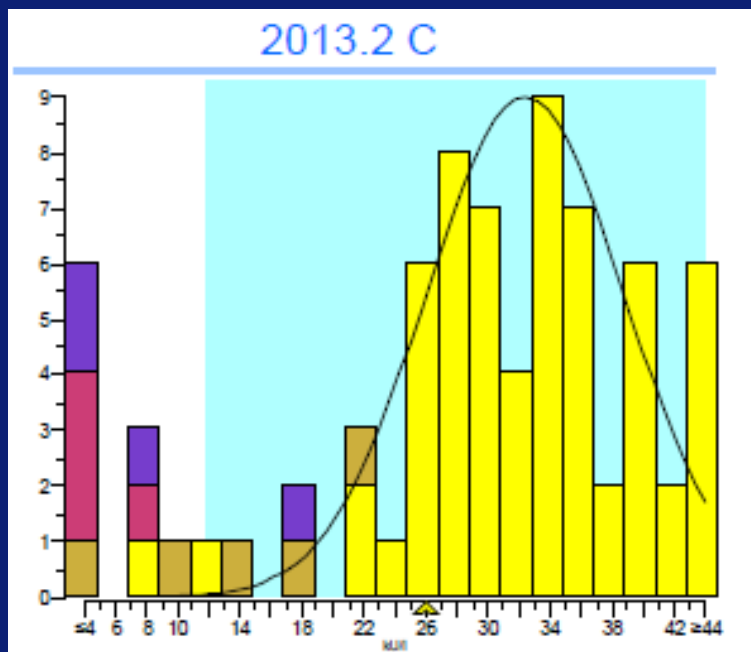
***Conclusion.*** Our findings indicate that determination of RF level is subject to large variation; high RF level has limited additive prognostic value compared to ACPA positivity. Thus, omitting RF level and using RF presence, ACPA presence, and ACPA level may improve the 2010 criteria for RA.



# Reuma: anti-CCP

\* 14/30 positief, w.v. 1 zwak positief

\* consensus bij negatief en positief, niet bij zwak positief

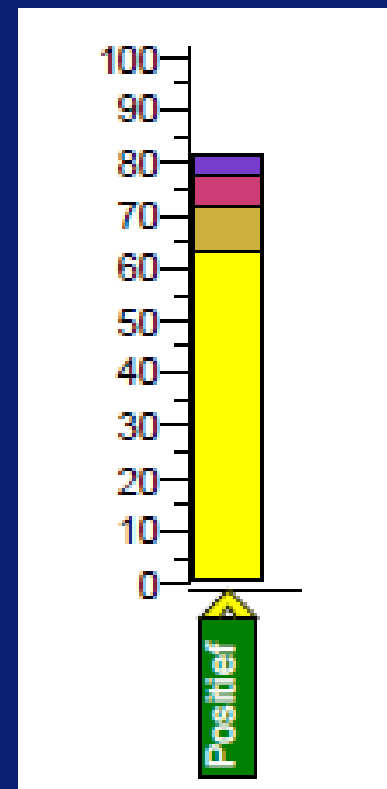
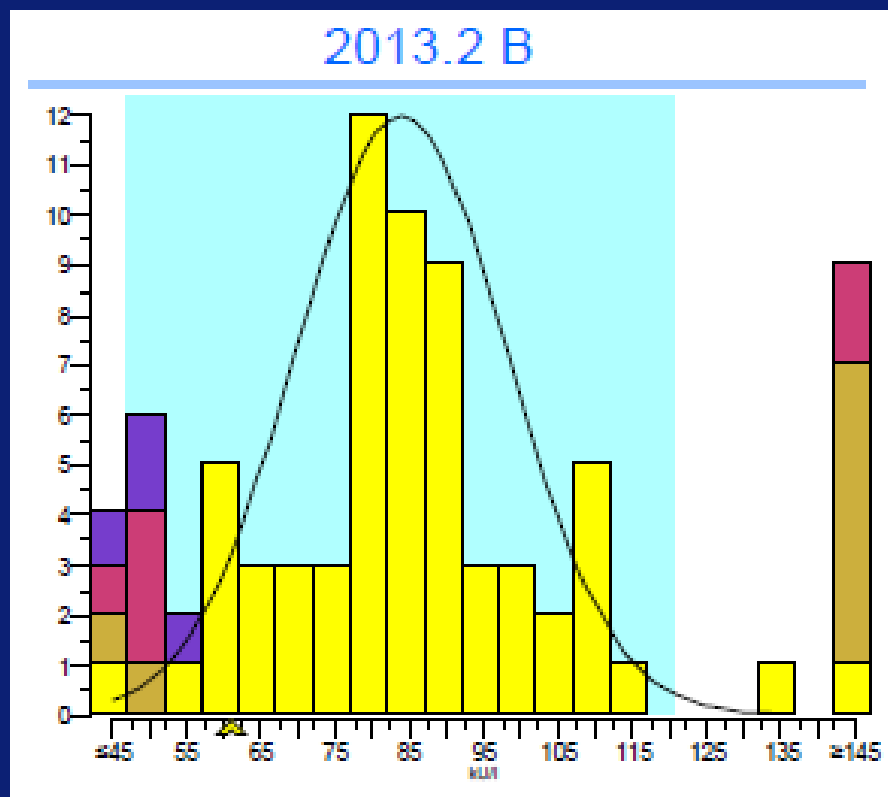


Patiënt:  
artralgie  
RF neg  
FA pos

■ ELiA IgG
■ ELISA
■ Luminoscentie
■ CLIA

# Reuma: anti-CCP

\* kwantitatieve variatie binnen en tussen methoden



ELIA IgG

ELISA

Luminoscentie

CLIA

# Anti-CCP ELISA

<u>Fabrikant</u>	<u>Cut-off U/ml</u>
Eurodiagnostica	25
Biorad	1
Inova	20
EuroImmune	5
Axis-Shield	50
Siemens	20
Abbott	5

Variatie uitslagen tussen fabrikanten, vanwege gebrek aan uniforme kalibratie

Anti-CCP laat zich echter wel harmoniseren, mits gebruik van een kalibrator

# Inter-ronde variatie RF en anti-CCP

\* RELARES standaard als meeloper vanaf 2013.1

## RF

	cons.	meth.	ALTM
gem.	176	176	222
SD	24	24	45
n	22	22	78
nu	1	1	5

	cons.	meth.	ALTM
gem.	162	162	218
SD	27	27	60
n	26	26	79
nu	1	1	3

	cons.	meth.	ALTM
gem.	151	151	198
SD	13	13	73
n	27	27	80
nu	5	5	3

## anti-CCP

	cons.	meth.	ALTM
gem.	359	359	346
SD	71	71	86
n	48	48	68
nu	0	0	6

	cons.	meth.	ALTM
gem.	314	314	312
SD	54	54	64
n	52	52	65
nu	2	2	5

	cons.	meth.	ALTM
gem.	299	299	296
SD	36	36	41
n	57	57	72
nu	8	8	17

2013.1

2013.2

2014.1

# SKML Reuma en Collageen

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# ANA, anti-dsDNA, -ENA



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Vol. 64, No. 4, April 2012, pp 475–487  
DOI 10.1002/acr.21591  
© 2012, American College of Rheumatology

SPECIAL ARTICLE

## American College of Rheumatology Classification Criteria for Sjögren's Syndrome: A Data-Driven, Expert Consensus Approach in the Sjögren's International Collaborative Clinical Alliance Cohort

S. C. SHIBOSKI,<sup>1</sup> C. H. SHIBOSKI,<sup>1</sup> L. A. CRISWELL,<sup>1</sup> A. N. BAER,<sup>2</sup> S. CHALLACOMBE,<sup>3</sup> H. LANFRANCHI,<sup>4</sup> M. SCHIÖDT,<sup>5</sup> H. UMEHARA,<sup>6</sup> F. VIVINO,<sup>7</sup> Y. ZHAO,<sup>8</sup> Y. DONG,<sup>9</sup> D. GREENSPAN,<sup>1</sup> A. M. HEIDENREICH,<sup>4</sup> P. HELIN,<sup>5</sup> B. KIRKHAM,<sup>3</sup> K. KITAGAWA,<sup>6</sup> G. LARKIN,<sup>3</sup> M. LI,<sup>9</sup> T. LIETMAN,<sup>1</sup> J. LINDEGAARD,<sup>10</sup> N. McNAMARA,<sup>1</sup> K. SACK,<sup>1</sup> P. SHIRLAW,<sup>3</sup> S. SUGAI,<sup>6</sup> C. VOLLENWEIDER,<sup>4</sup> J. WHITCHER,<sup>1</sup> A. WU,<sup>1</sup> S. ZHANG,<sup>9</sup> W. ZHANG,<sup>11</sup> J. S. GREENSPAN,<sup>1</sup> AND T. E. DANIELS,<sup>1</sup>  
FOR THE SJÖGREN'S INTERNATIONAL COLLABORATIVE CLINICAL ALLIANCE (SICCA) RESEARCH GROUPS

ARTHRITIS & RHEUMATISM  
Vol. 64, No. 8, August 2012, pp 2677–2686  
DOI 10.1002/art.34473  
© 2012, American College of Rheumatology

## Derivation and Validation of the Systemic Lupus International Collaborating Clinics Classification Criteria for Systemic Lupus Erythematosus

Michelle Petri,<sup>1</sup> Ana-Maria Orbai,<sup>1</sup> Graciela S. Alarcón,<sup>2</sup> Caroline Gordon,<sup>3</sup> Joan T. Merrill,<sup>4</sup> Paul R. Fortin,<sup>5</sup> Ian N. Bruce,<sup>6</sup> David Isenberg,<sup>7</sup> Daniel J. Wallace,<sup>8</sup> Ola Nived,<sup>9</sup> Gunnar Sturfelt,<sup>9</sup> Rosalind Ramsey-Goldman,<sup>10</sup> Sang-Cheol Bae,<sup>11</sup> John G. Hanly,<sup>12</sup> Jorge Sánchez-Guerrero,<sup>13</sup> Ann Clarke,<sup>14</sup> Cynthia Aranow,<sup>15</sup> Susan Manzi,<sup>16</sup> Murray Urowitz,<sup>17</sup> Dafna Gladman,<sup>17</sup> Kenneth Kalunian,<sup>18</sup> Melissa Costner,<sup>19</sup> Victoria P. Werth,<sup>20</sup> Asad Zoma,<sup>21</sup> Sasha Bernatsky,<sup>14</sup> Guillermo Ruiz-Irastorza,<sup>22</sup> Munther A. Khamashta,<sup>23</sup> Soren Jacobsen,<sup>24</sup> Jill P. Buyon,<sup>25</sup> Peter Maddison,<sup>26</sup> Mary Anne Dooley,<sup>27</sup> Ronald F. van Vollenhoven,<sup>28</sup> Ellen Ginzler,<sup>29</sup> Thomas Stoll,<sup>30</sup> Christine Peschken,<sup>31</sup> Joseph L. Jorizzo,<sup>32</sup> Jeffrey P. Callen,<sup>33</sup> S. Sam Lim,<sup>34</sup> Barri J. Fessler,<sup>2</sup> Murat Inanc,<sup>35</sup> Diane L. Kamen,<sup>36</sup> Anisur Rahman,<sup>7</sup> Kristjan Steinsson,<sup>37</sup> Andrew G. Franks Jr.,<sup>25</sup> Lisa Sigler,<sup>1</sup> Suhail Hameed,<sup>1</sup> Hong Fang,<sup>1</sup> Ngoc Pham,<sup>1</sup> Robin Brey,<sup>38</sup> Michael H. Weisman,<sup>39</sup> Gerald McGwin Jr.,<sup>2</sup> and Laurence S. Magder<sup>40</sup>

ARTHRITIS & RHEUMATISM  
Vol. 65, No. 11, November 2013, pp 2737–2747  
DOI 10.1002/art.38098  
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## Arthritis & Rheumatism

An Official Journal of the American College of Rheumatology  
www.arthritisrheum.org and wileyonlinelibrary.com

SPECIAL ARTICLE

## 2013 Classification Criteria for Systemic Sclerosis

An American College of Rheumatology/European League Against Rheumatism Collaborative Initiative

AUTOIMMUNE, CHOLESTATIC AND BILIARY DISEASE

## Simplified Criteria for the Diagnosis of Autoimmune Hepatitis

Elke M. Hennes,<sup>1</sup> Mikio Zeniya,<sup>2</sup> Albert J. Czaja,<sup>3</sup> Albert Parés,<sup>4</sup> George N. Dalekos,<sup>5</sup> Edward L. Krawitt,<sup>6</sup> Paulo L. Bittencourt,<sup>7</sup> Gilda Porta,<sup>8</sup> Kirsten M. Boberg,<sup>9</sup> Harald Hofer,<sup>10</sup> Francesco B. Bianchi,<sup>11</sup> Minoru Shibata,<sup>12</sup> Christoph Schramm,<sup>1</sup> Barbara Eisenmann de Torres,<sup>13</sup> Peter R. Galle,<sup>13</sup> Ian McFarlane,<sup>14</sup> Hans-Peter Dienes,<sup>15</sup> Ansgar W. Lohse,<sup>1</sup> and the International Autoimmune Hepatitis Group

# ANA, anti-dsDNA, -ENA

\* Opgenomen in classificatie criteria (systemische) AIZ

- SLE: ANA, anti-dsDNA, anti-Sm
- Sjögren: anti-SSA, anti-SSB
- systemische sclerose: ACA, anti-Scl70, anti-RPIII
- MCTD: ANA, anti-RNP
- autoimmuun hepatitis: ANA

\* Prognostische waarde

- anti-synthetase (Jo-1): ASS/longfibrose bij PM
- anti-SSA/-SSB: neonatale lupus/CHB
- ACA, anti-Scl70: gelimiteerde-, diffuse SSc

\* Ziekte activiteit: anti-dsDNA bij SLE

# SKML Collageen

- \* Circa 78 deelnemers
- \* Methode ANA screen:
  - HEp2(000) IIF
  - solid phase assay “CTD screen”
- \* Methode anti-dsDNA:
  - EliA IgG
  - Crithidia IIF
  - ELISA
  - overig (RIA, CLIA)
- \* Methode ENA typering:
  - EliA IgG
  - immunoblot
  - ELISA
  - overig (CLIA)



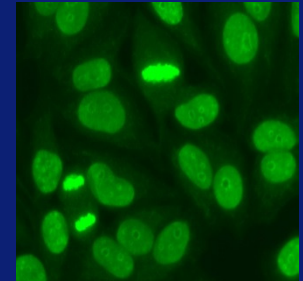
# Collageen: ANA screen

*Ann Rheum Dis* 2010;**69**:1420–1422.

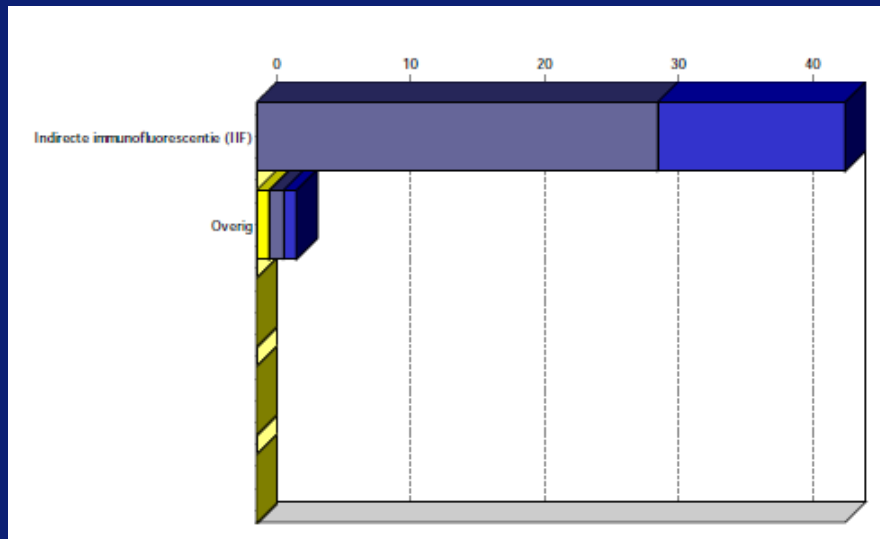
\* IIF gouden standaard

**Box 1** Recommendations of the American College of Rheumatology (ACR) Antinuclear Antibody (ANA) Task Force

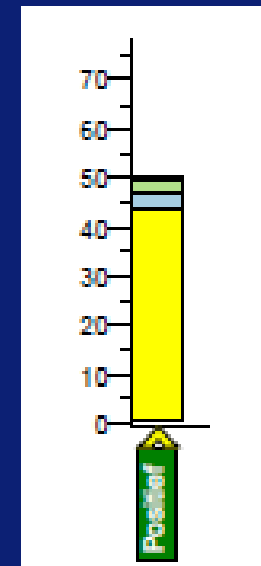
► Immunofluorescence ANA test should remain the gold standard for ANA testing.



\* Deelnemers conform



2012.1



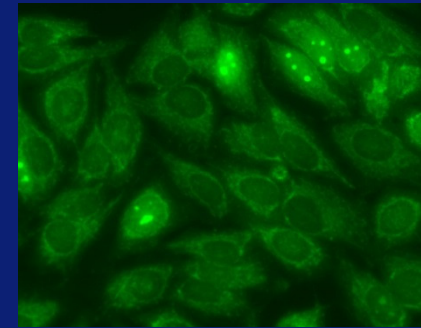
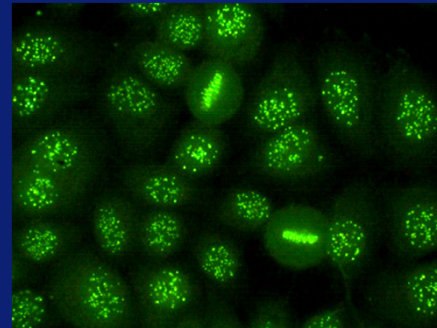
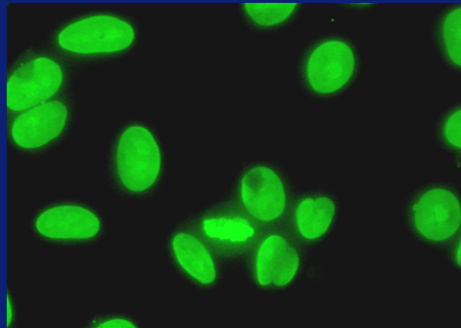
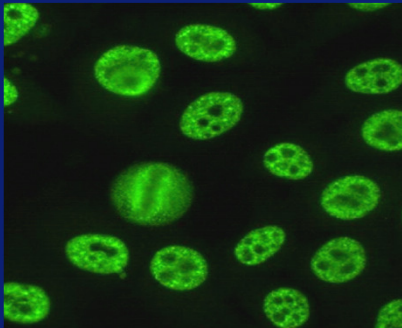
2014.1

Indirecte Immunofluorescentie (IIF)
  Overig
  Luminoscentie
  ELISA

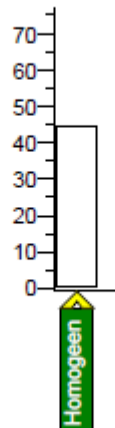
# Collageen: ANA screen

\* 25/30 positief

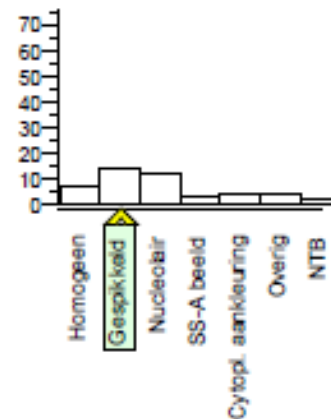
\* Patronen: gespikkeld, homogeen, centromeer, SSA-beeld



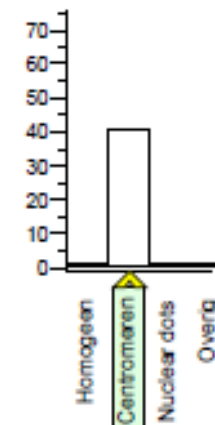
2013.2 B



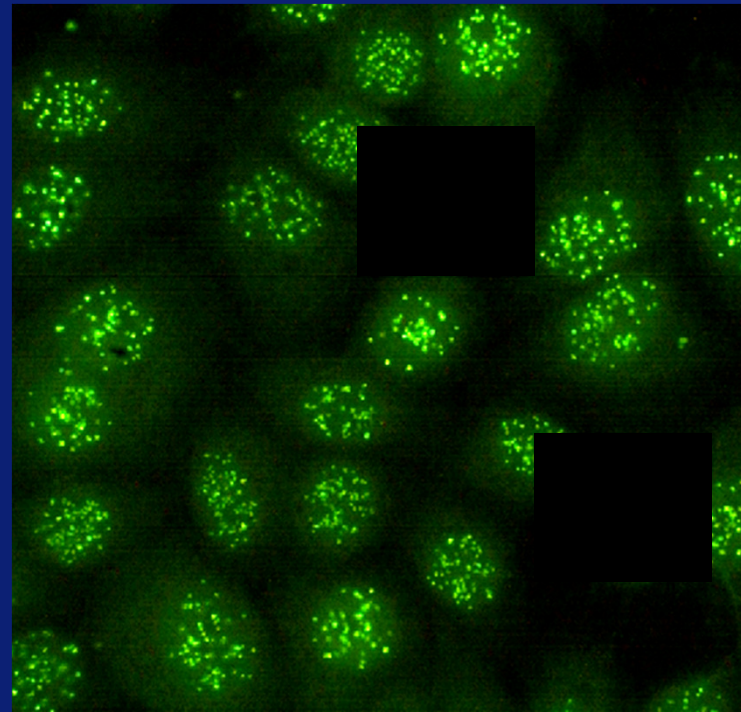
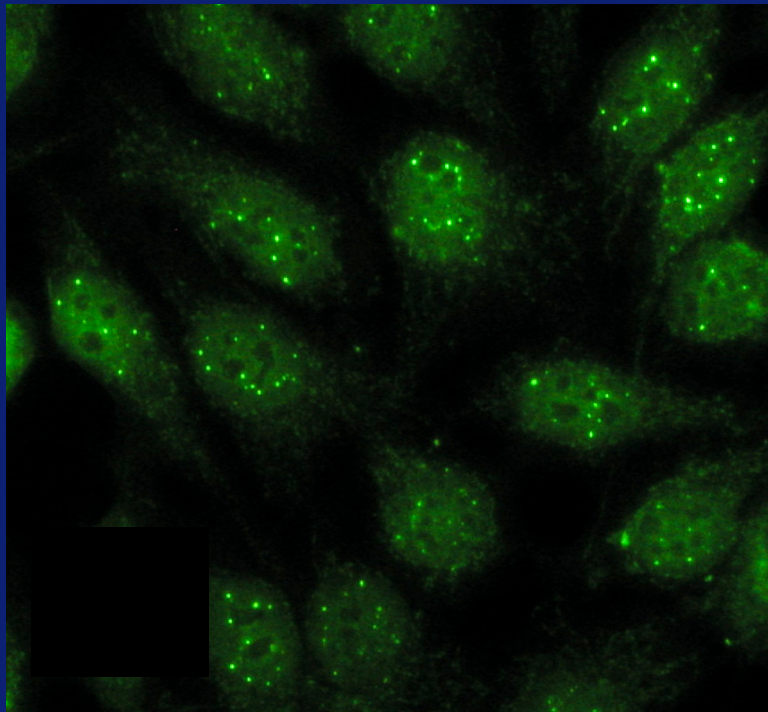
2013.1 E



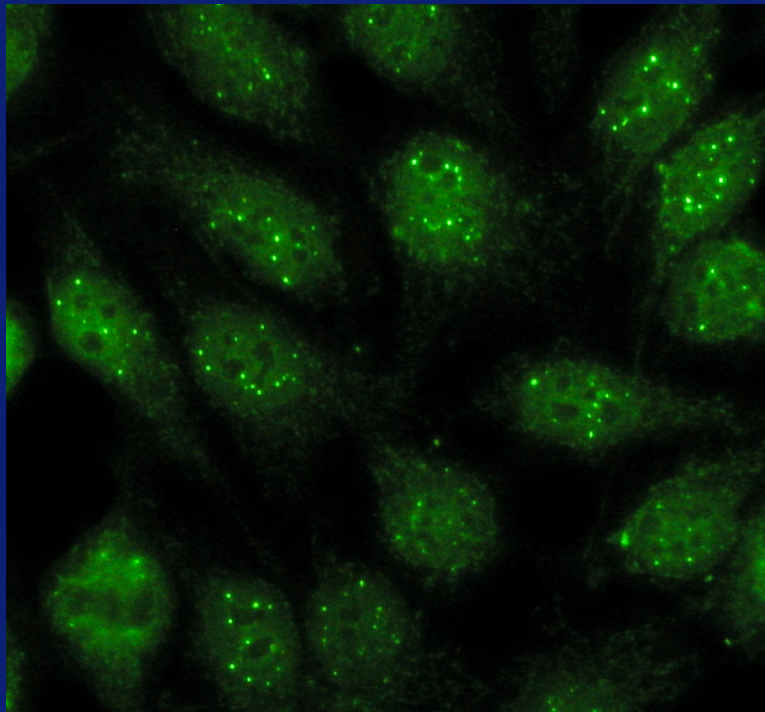
2013.1 F



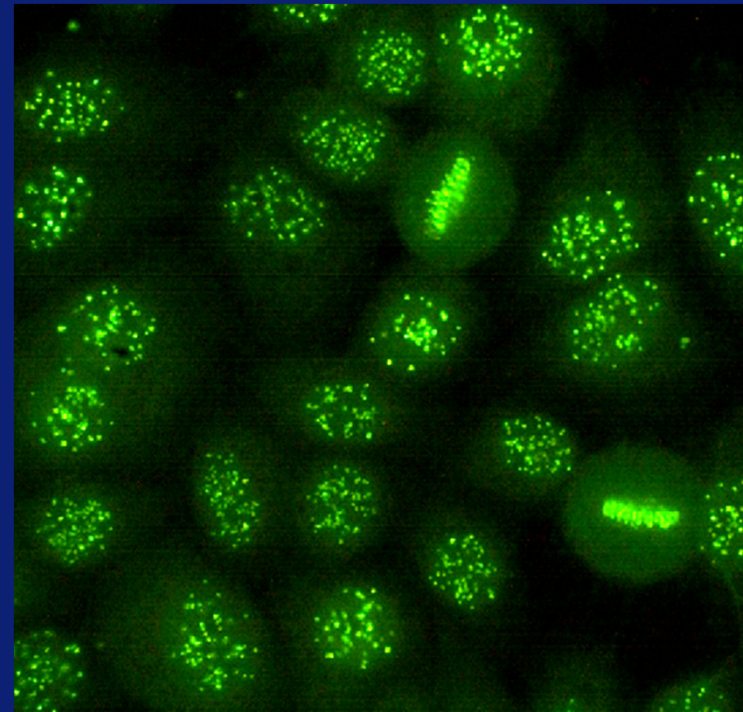
# ANA screen: dots



# ANA screen: dots



nucleaire dots

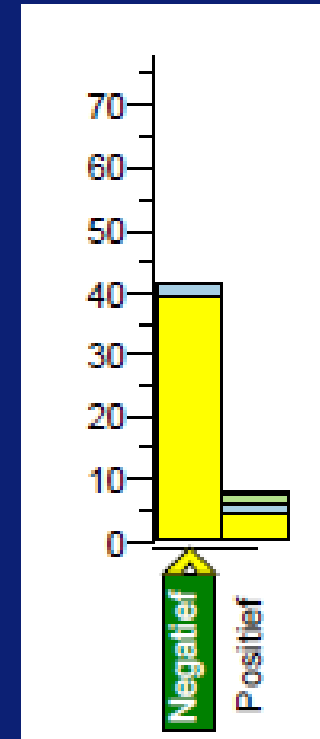
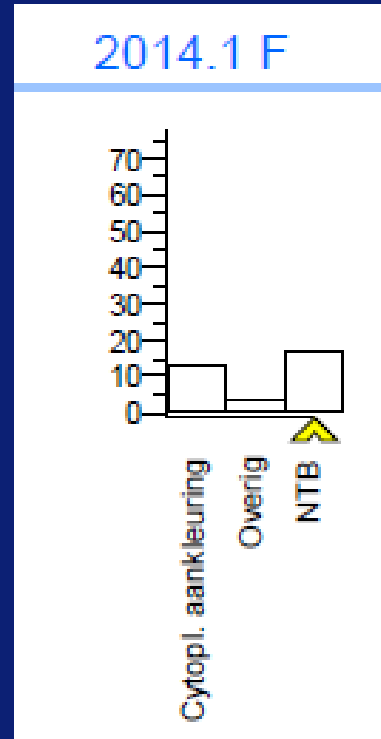
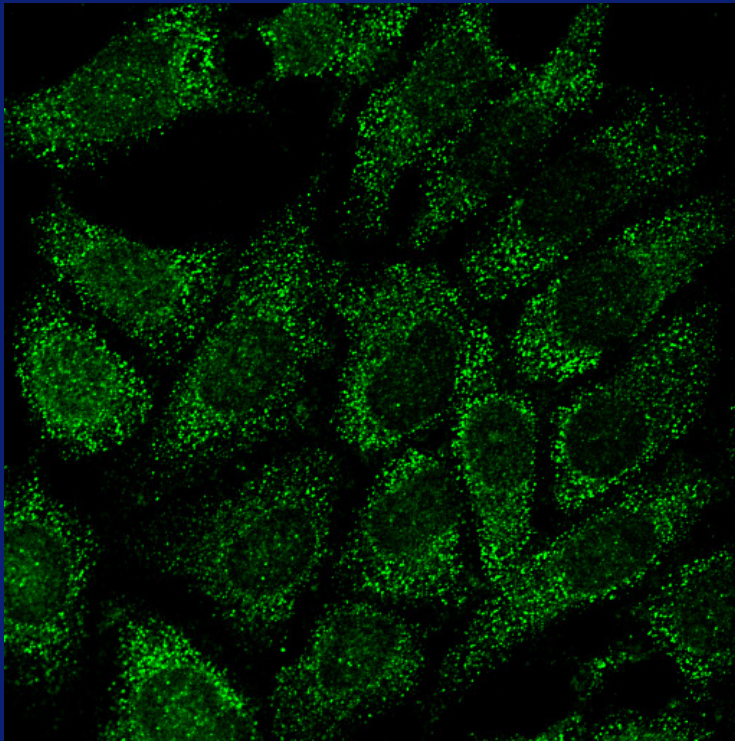


centromeer

=> kwaliteit HEp celpreparaat en expertise cruciaal



# ANA screen: cytoplasmatisch



anti-Jo-1 positief

=> formeel ANA negatief, maar...

## International recommendations for the assessment of autoantibodies to cellular antigens referred to as anti-nuclear antibodies

Nancy Agmon-Levin,<sup>1,2</sup> Jan Damoiseaux,<sup>3</sup> Cees Kallenberg,<sup>4</sup> Ulrich Sack,<sup>5</sup> Torsten Witte,<sup>6</sup> Manfred Herold,<sup>7,8</sup> Xavier Bossuyt,<sup>9</sup> Lucille Musset,<sup>10</sup> Ricard Cervera,<sup>11</sup> Aresio Plaza-Lopez,<sup>12</sup> Carlos Dias,<sup>13</sup> Maria José Sousa,<sup>14</sup> Antonella Radice,<sup>15</sup> Catharina Eriksson,<sup>16</sup> Olof Hultgren,<sup>17</sup> Markku Viander,<sup>18</sup> Munther Khamashta,<sup>19</sup> Stephan Regenass,<sup>20</sup> Luis Eduardo Coelho Andrade,<sup>21</sup> ...<sup>22</sup> ...<sup>23</sup> ...<sup>24</sup> Donald B Bloch,<sup>25</sup>

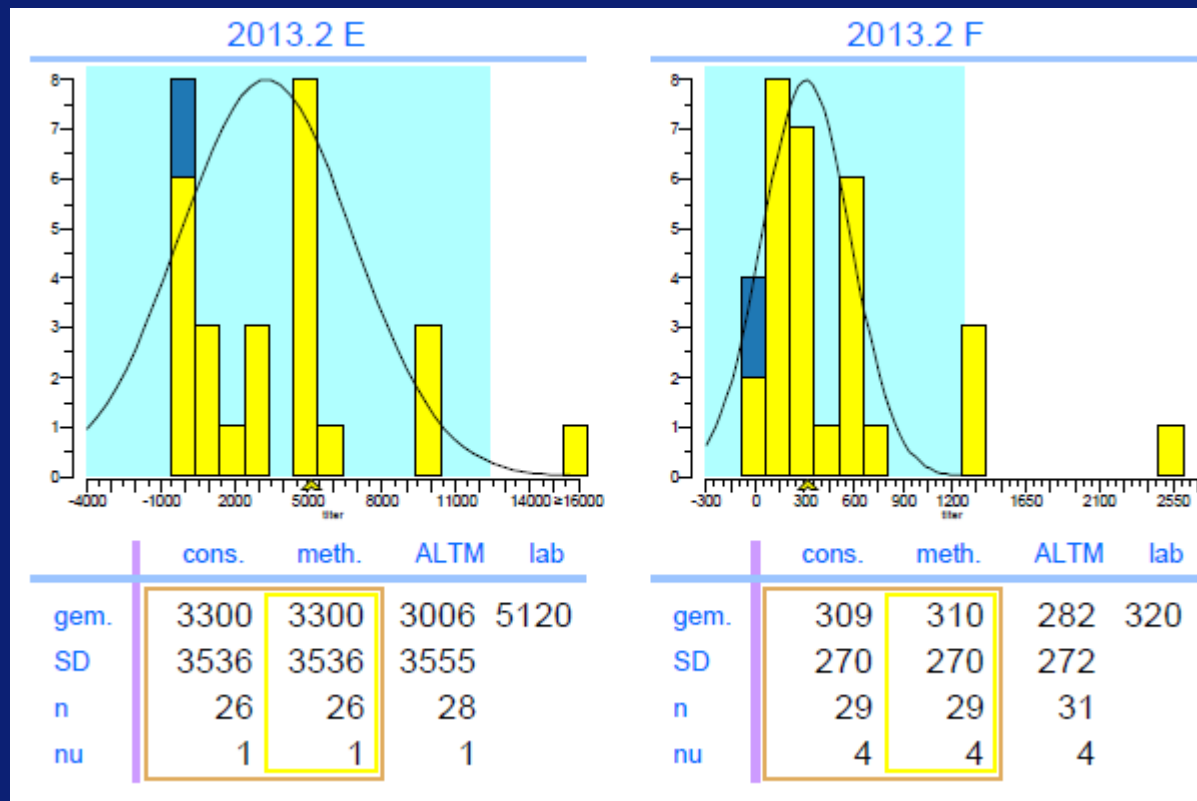
### Terminology

The terms 'anti-nuclear antibodies' (ANA) and 'extractable nuclear antigens' (ENA) are no longer technically correct and do not cover the entire spectrum of relevant autoantibodies. ...<sup>26</sup> ...<sup>27</sup> ...<sup>28</sup> ...<sup>29</sup> ...<sup>30</sup> Merlin Wilson,<sup>31</sup> Olli Vainio,<sup>32</sup> Luigi Meroni,<sup>35</sup> Yehuda Shoenfeld<sup>1,2,36</sup>

'ANA' may now detect antibodies directed against nuclear and non-nuclear elements (see recommendation 13), while 'ENA' may refer to antigens that are neither extractable nor nuclear. Therefore, one may suggest changing these outdated terms to appropriate ones, such as anticellular antibodies and specific antibodies, respectively. Such a change in nomenclature requires broad agreement within the medical community and an adjustment period, as most manuscripts and textbooks utilise these 'classic terms'. In the current manuscript we have used the

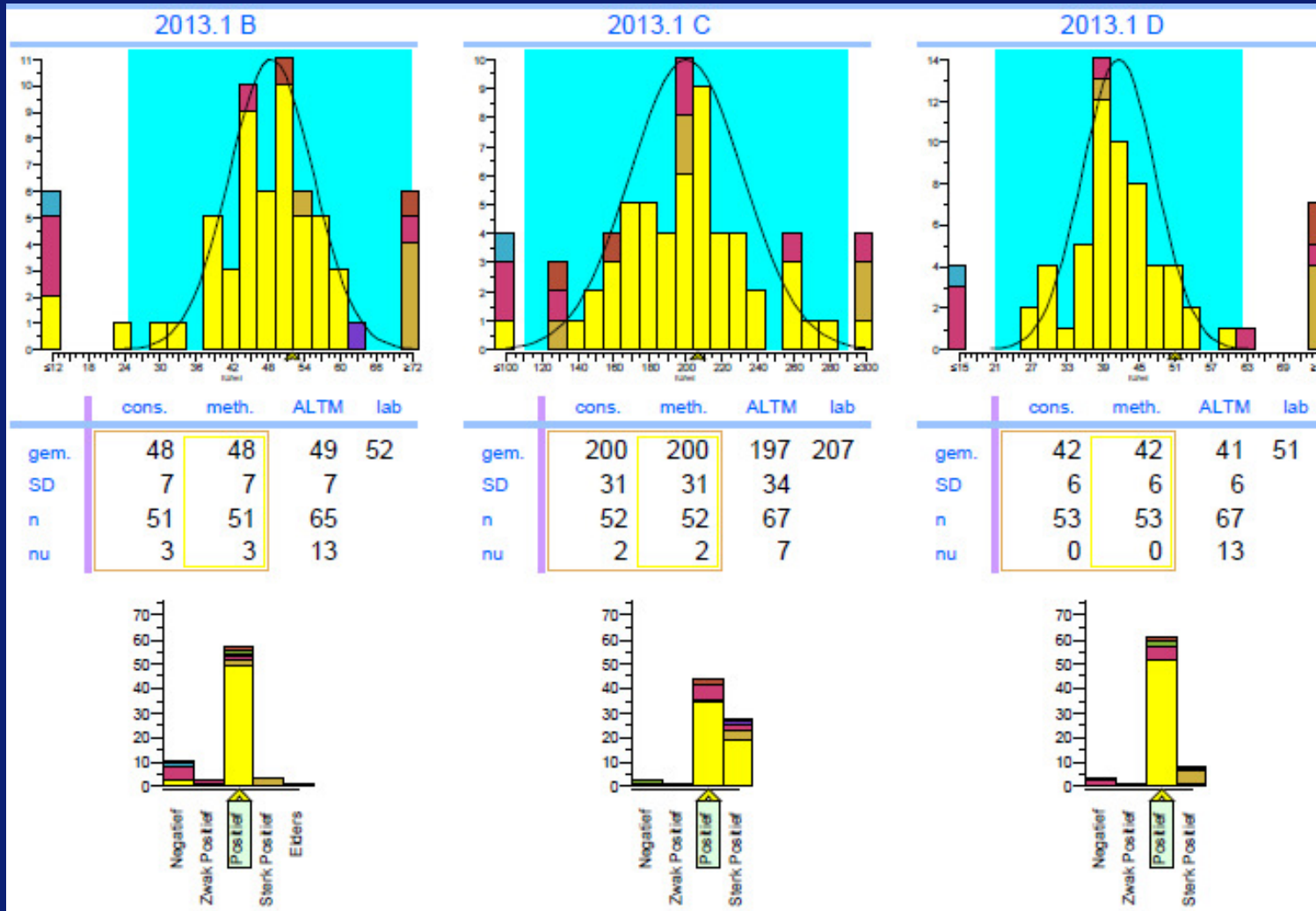
# Collageen: ANA screen

- \* 25/30 positief
- \* Titers: 160-5120, rapportage zeer variabel:



# Collageen: anti-dsDNA

\* 15/30 positief





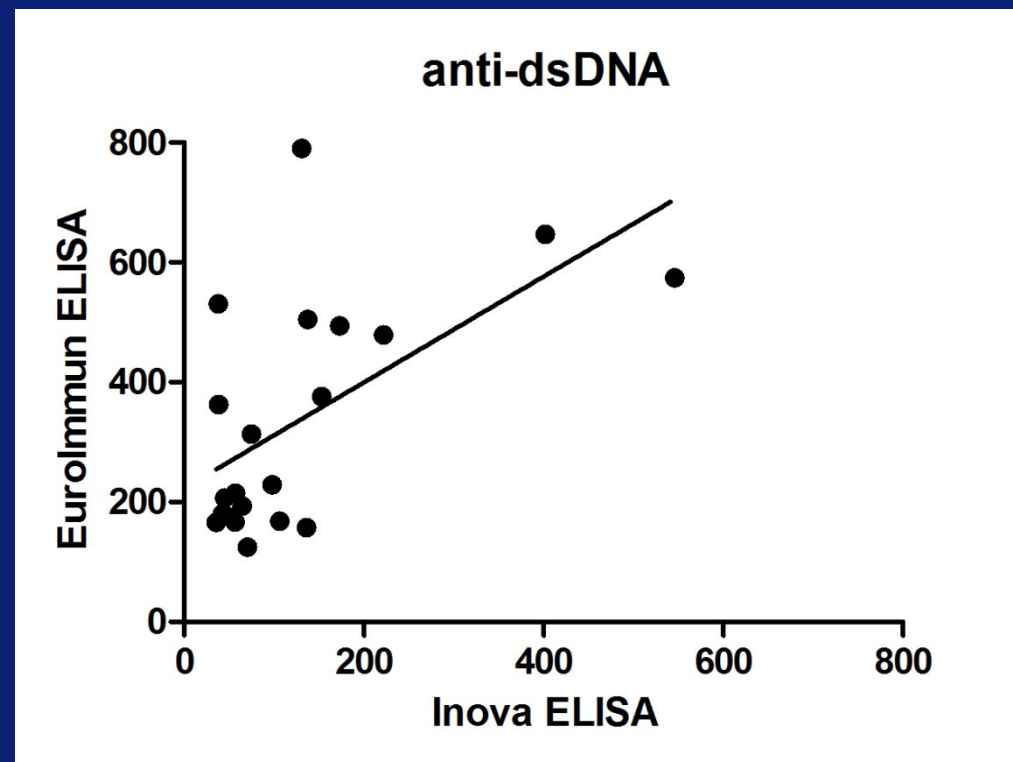
# Harmonisatie anti-dsDNA

\* Verschil in kwantitatieve uitslagen ondanks kalibratie

SLE cohort

<u>HA ELISA</u>	<u>NcX ELISA</u>	
	neg	pos
neg	12	0
pos	0	33

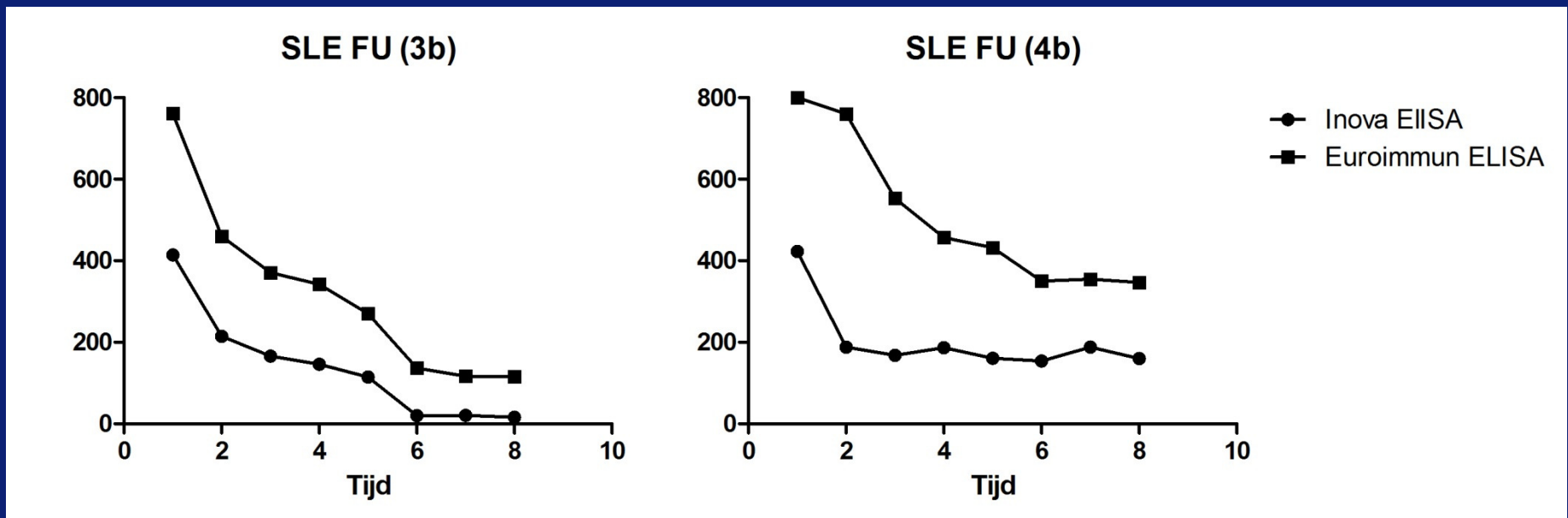
$R^2 = 0,34$



# Harmonisatie anti-dsDNA

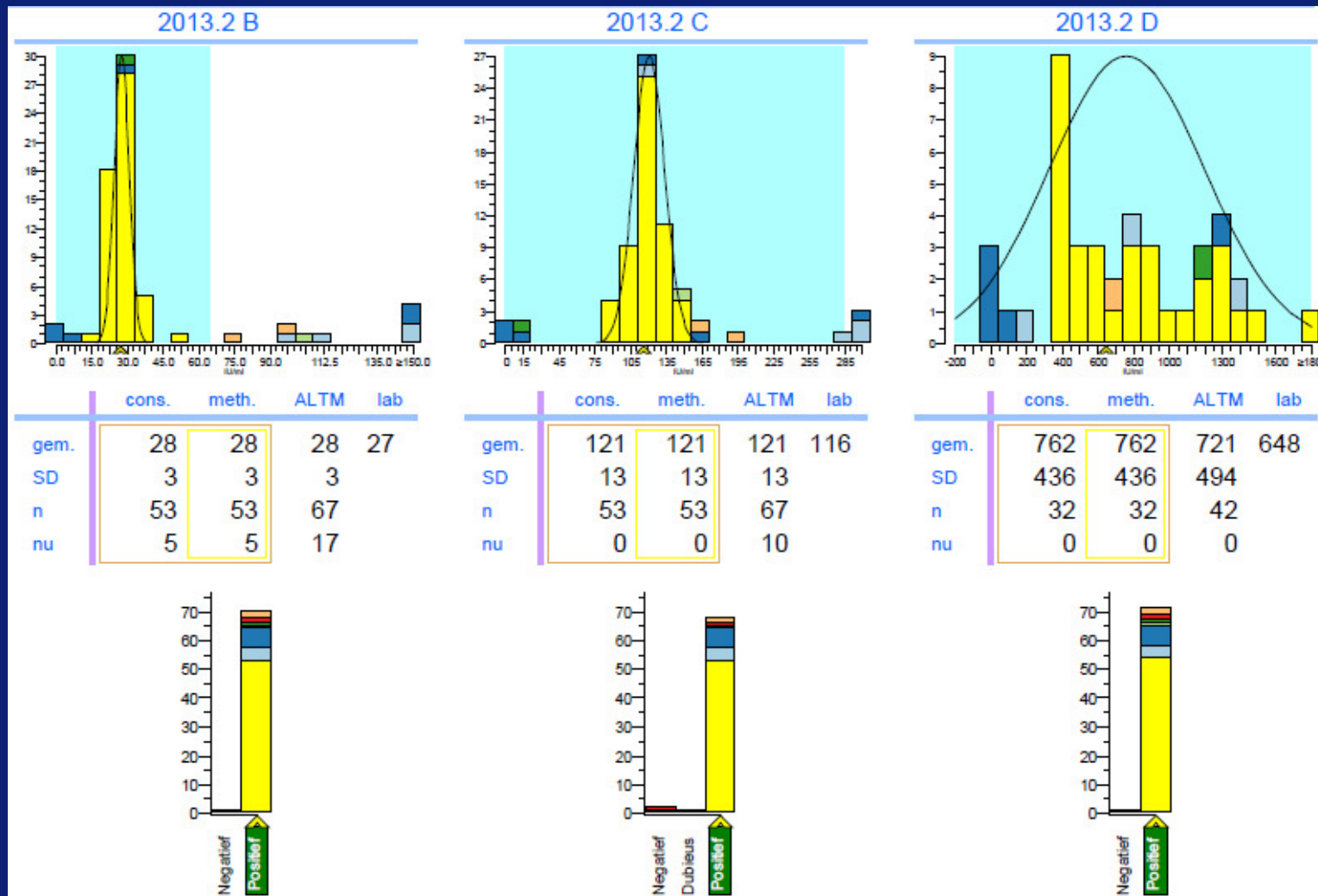
\* Verschil in kwantitatieve uitslagen ondanks kalibratie

## SLE patient



# Collageen: EliA anti-dsDNA

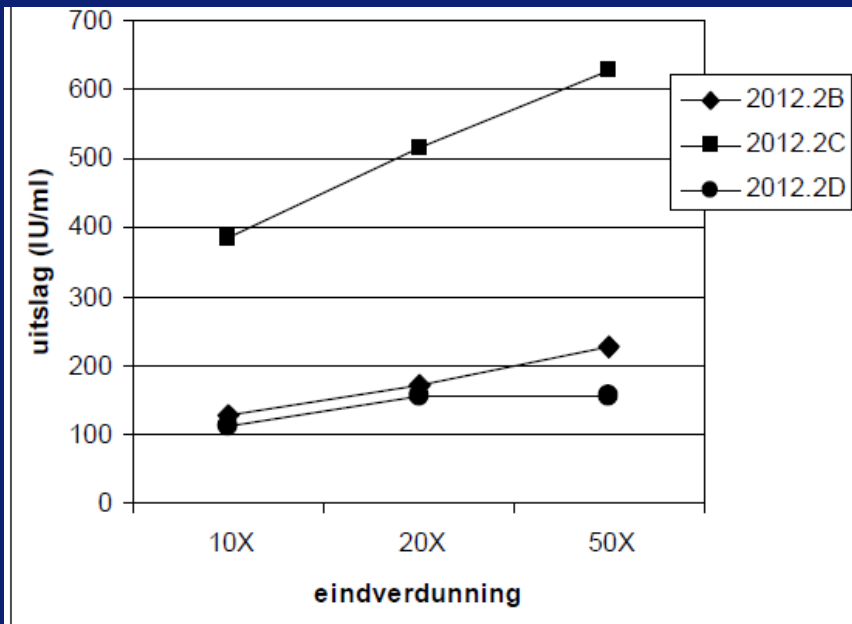
\* 15/30 positief



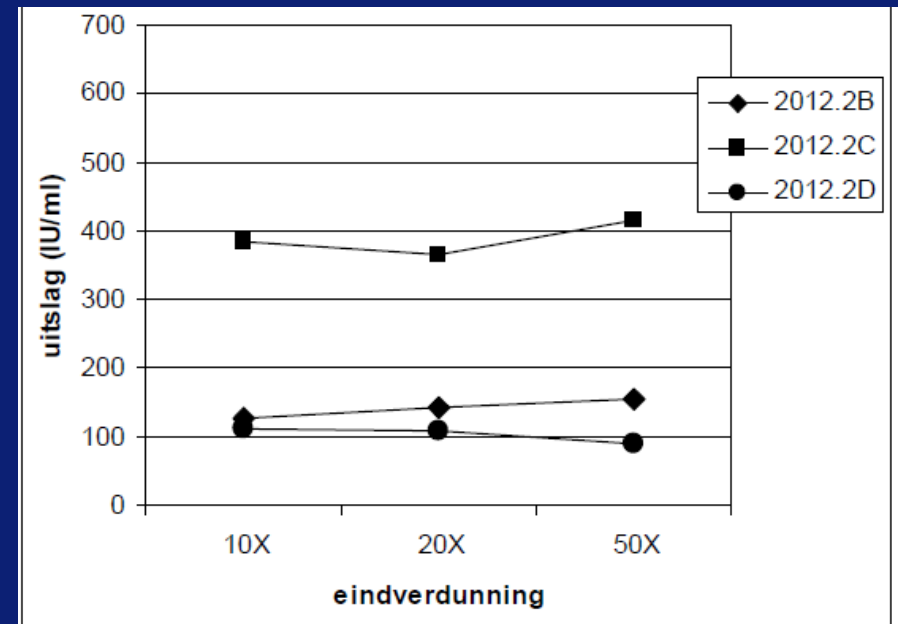
# Collageen: EliA anti-dsDNA

\* Bij “above” uitslagen, voorverdunnen met diluent vs. serum

diluent



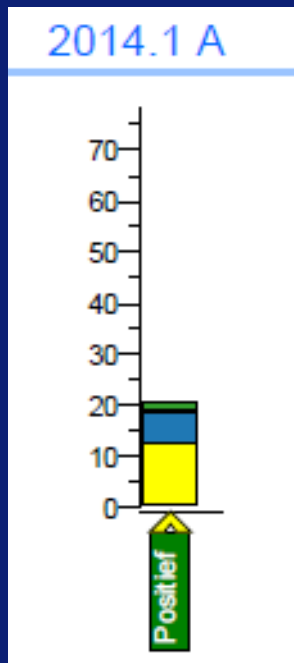
serum



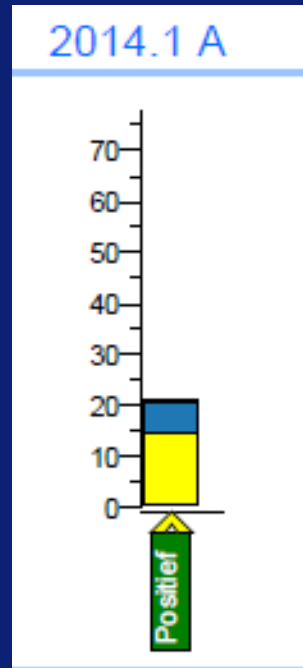
=> uitslag “above”: voorverdund met serum hertesten aanbevolen

# Collageen: anti-SSA en -SSB

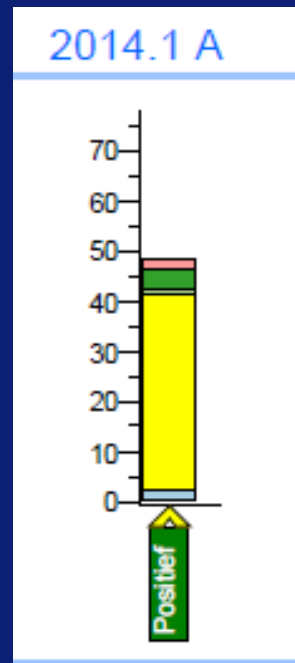
- \* 6/30 SSA/Ro52 positief, 8/30 SSA/Ro60, 3/30 SSB
- \* Typisch Sjögren: hoge titers, goede consensus



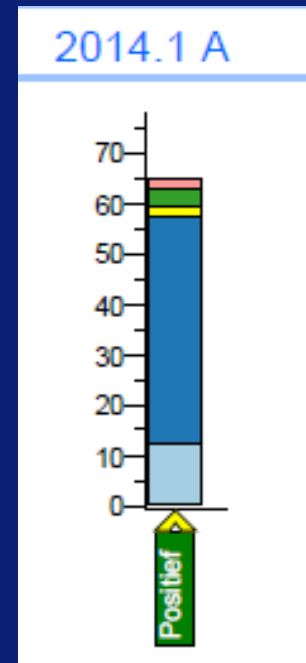
Ro52



Ro60



Ro52+60

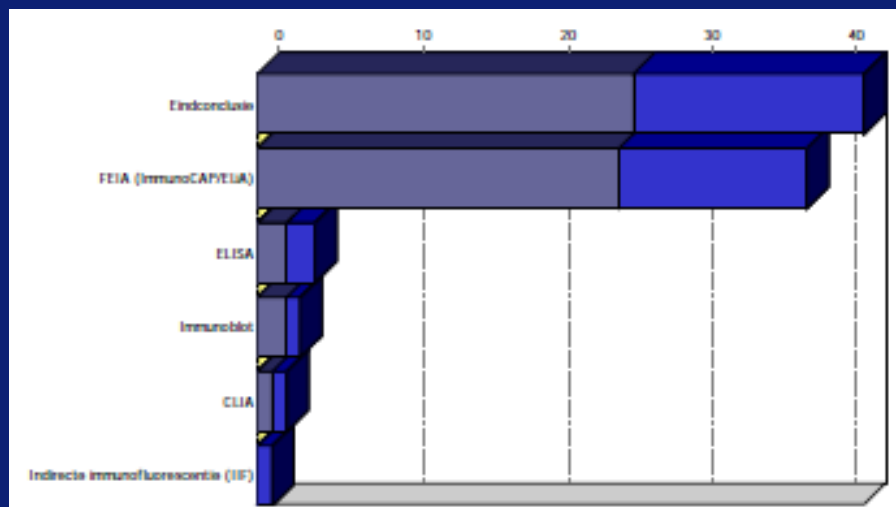


SSB

# Collageen: anti-SSA en -SSB

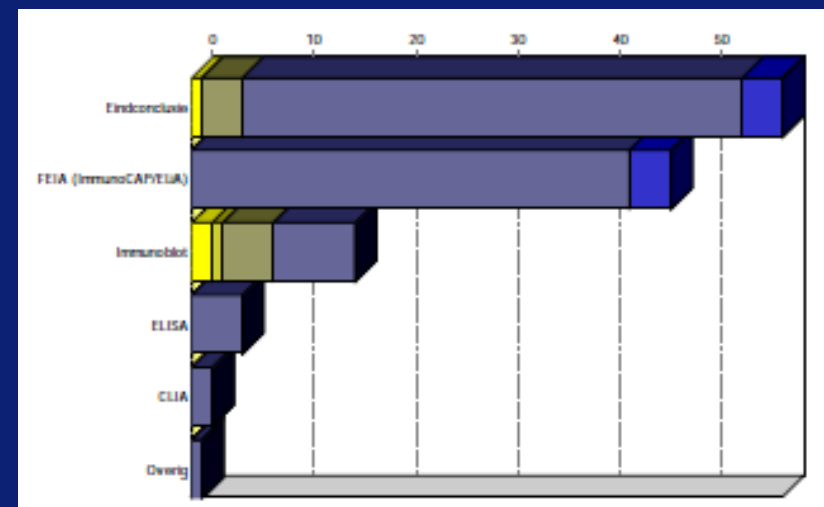
\* 6/30 SSA/Ro52 positief, 8/30 SSA/Ro60, 3/30 SSB

\* Typisch Sjögren: hoge titers, goede consensus



SSA/Ro52 en/of 60

2012.2F

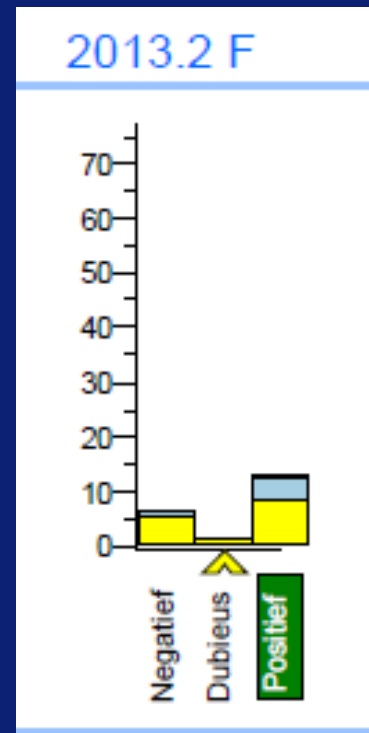
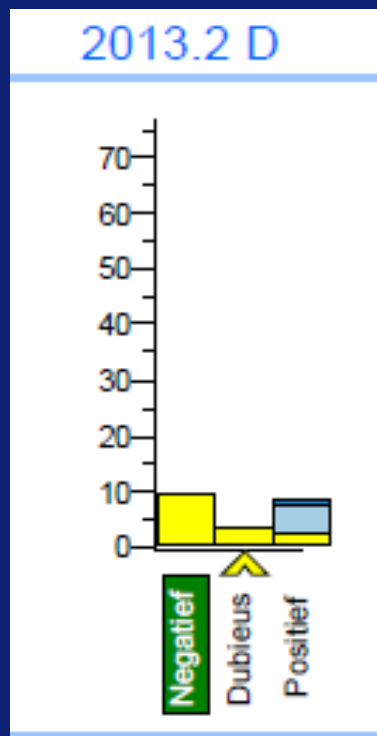


SSB

=> anti-SSB detectie met immunoblot minder gevoelig

# Collageen: anti-SSA en -SSB

\* Zwak positieve anti-SSA/Ro60, geen Sjögren

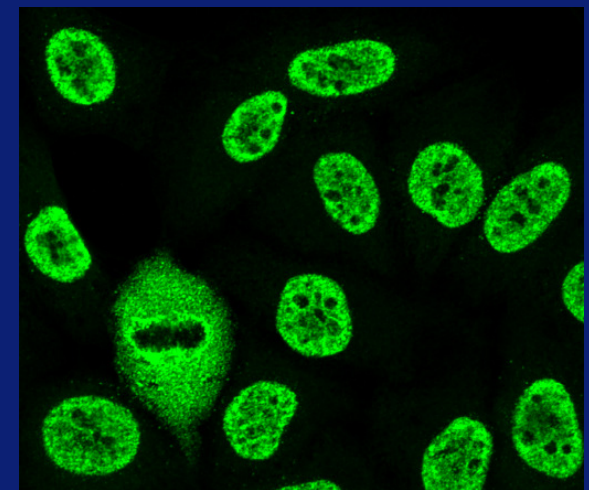
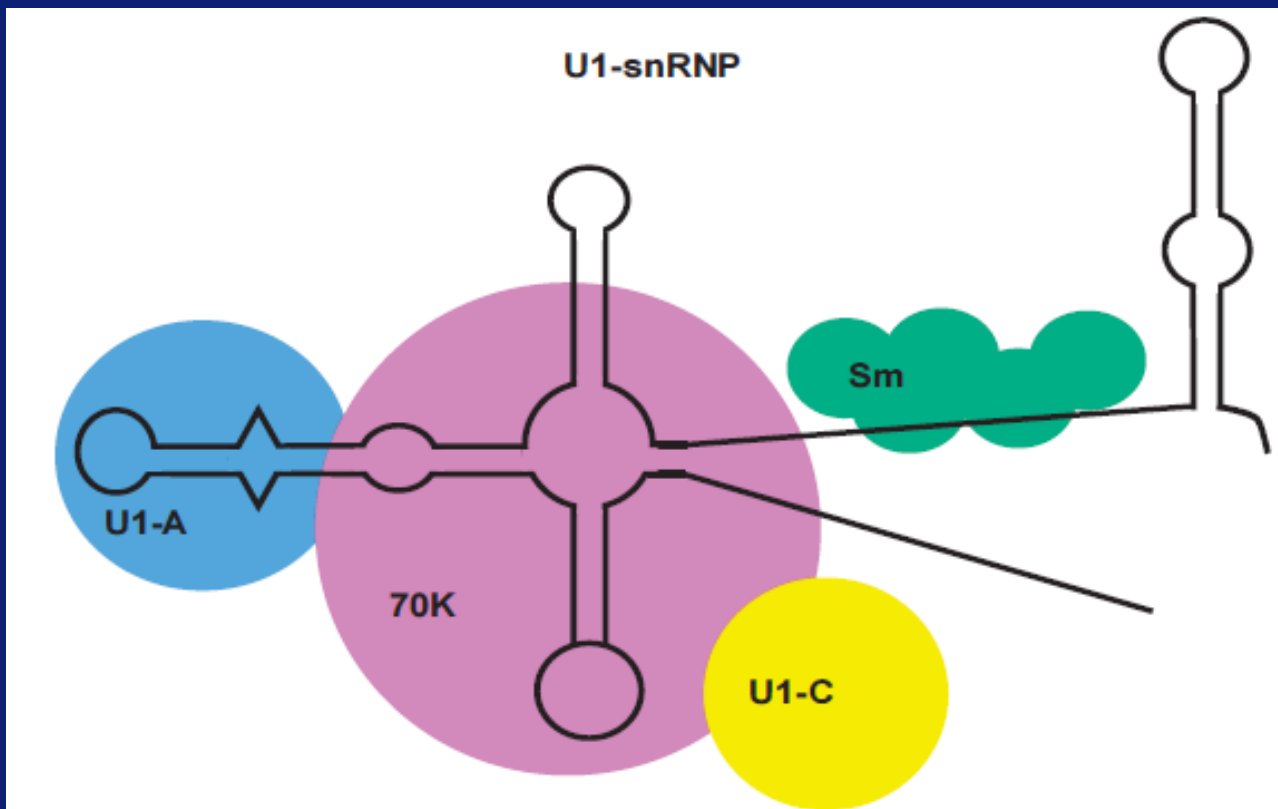


=> anti-Ro60 detectie met immunoblot minder gevoelig



# Collageen: anti-RNP

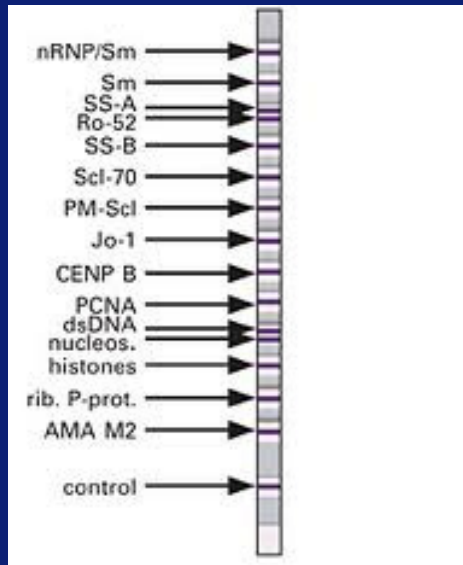
- \* 13/30 positief
- \* Natief U1-snRNP/Sm complex





# Collageen: anti-RNP

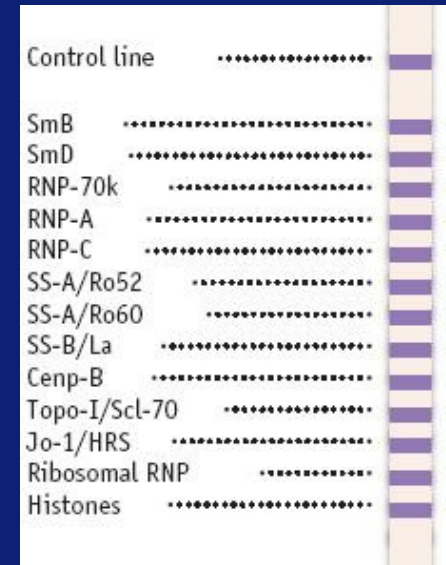
- \* 13/30 positief, waarvan 6 discrepante rapportage
- \* Substraat: gezuiverd U1-snRNP/Sm complex  
vs.  
recombinant RNP A,C,70



EuroImmun LIA  
Inova ELISA

vs.

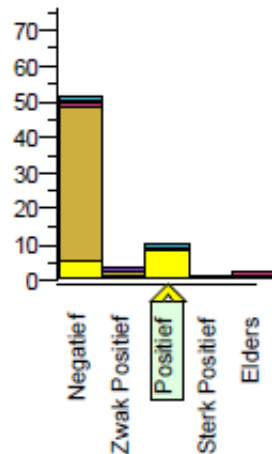
Innogenetics LIA  
Phadia FEIA



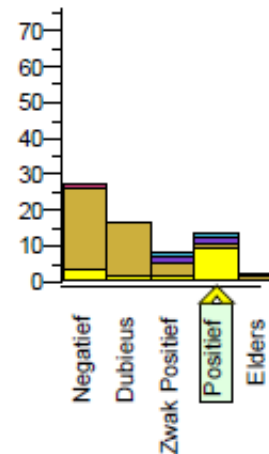
# Collageen: anti-RNP

- \* Anti-RNP A,C,70: consensus positief (MCTD, SLE)
- \* Anti-natief RNP en -RNP A, C: geen consensus (SLE)

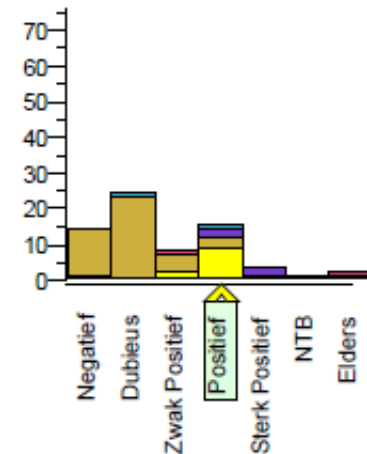
2013.1 B



2013.1 C



2013.1 D



Anti-natief RNP (SLE)

Anti-RNP A, C (SLE)

Immunoblot

FEIA (ImmunoCAP/ELiA)

Overig

ELISA

## The Appearance of U1 RNP Antibody Specificities in Sequential Autoimmune Human Antisera Follows a Characteristic Order That Implicates the U1–70 kd and B'/B Proteins as Predominant U1 RNP Immunogens

Eric L. Greidinger and Robert W. Hoffman

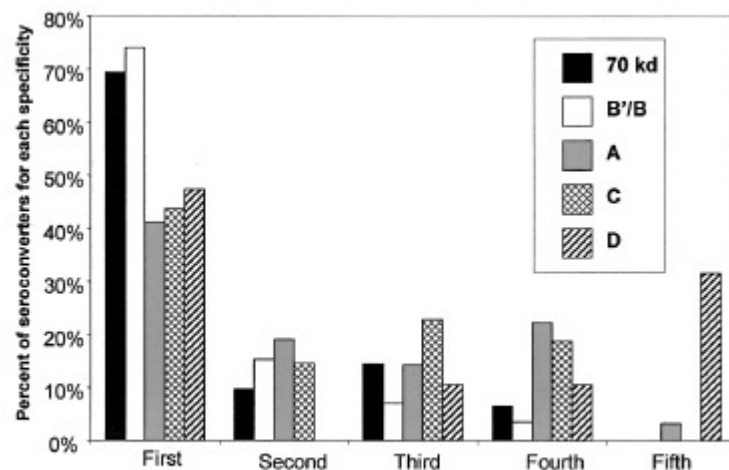


Figure 2. Order of appearance of antibodies to U1 RNP peptides in 163 witnessed seroconverters. The order in which seroconversion

Table 1. Results of matched group analyses of anti-RNP antibody prevalences among 109 initial seroconverters\*

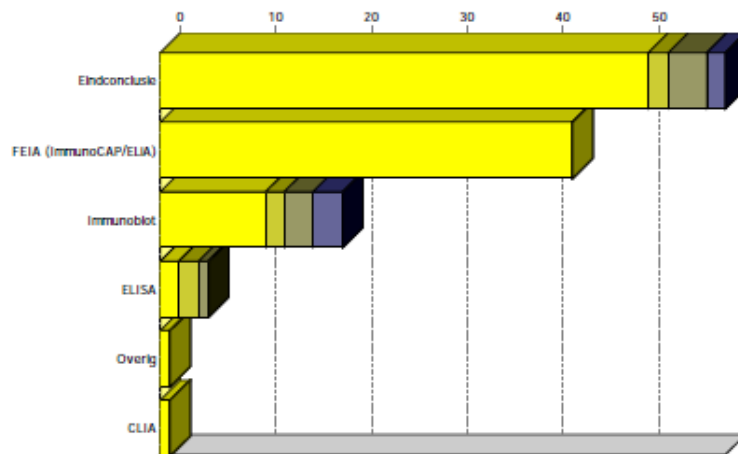
Antibody	First present	First present without concurrent 70 kd	First present without concurrent B'/B	<i>P</i> †	<i>P</i> ‡
Anti-70 kd	43	–	14	–	0.006
Anti-B'/B	63	34	–	0.006	–
Anti-A	26	10	8	0.009	<0.0005
Anti-C	21	6	4	<0.0005	<0.0005
Anti-D	9	5	3	<0.0005	<0.0005

# Collageen: anti-Sm

\* 8/30 positief

\* Geen consensus bij zwak positief, ELiA minder sensitief (2012)

## Sm



Uw uitslagen:

Eindconclusie	Zwak Positief
Immunoblot, Euroimmun	Dubieus
Immunoblot, Immnogenetics	Positief
ELISA, INOVA	Zwak Positief
FEIA (ImmunoCAP/ELiA), Phadia	Negatief

2012.1C, SLE patient, anti-RNP/-Sm (zwak) positief

■ = Negatief     
 ■ = Dubieus     
 ■ = Zwak Positief     
 ■ = Positief

# Phadia: anti-Sm > -SmD<sup>p</sup>

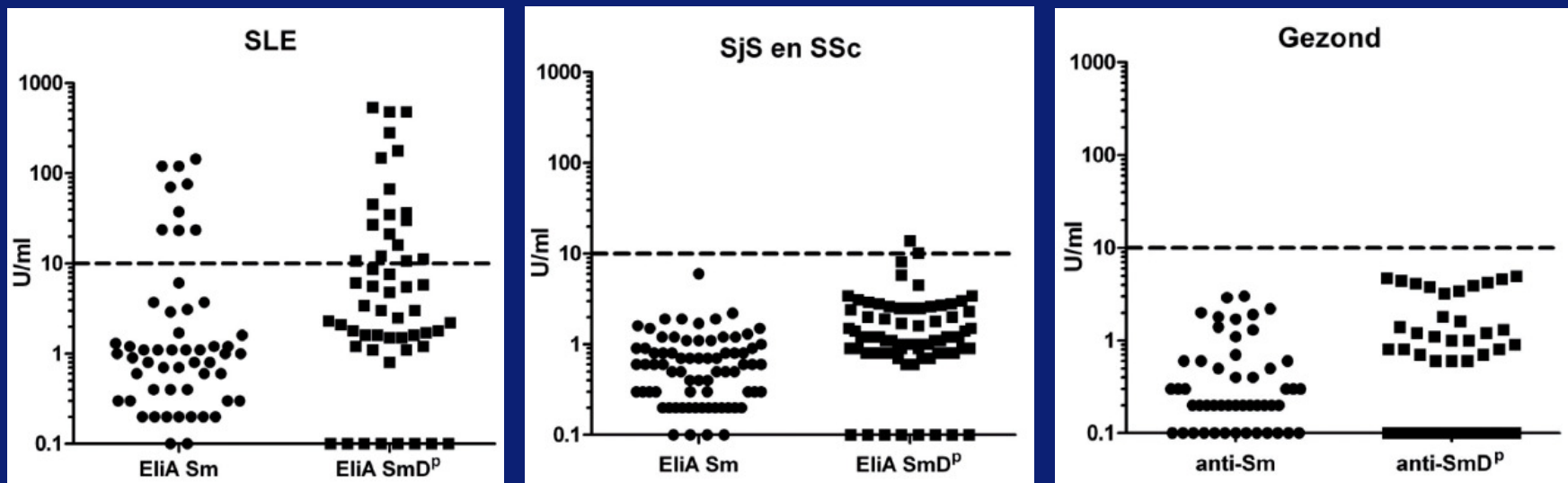
Special Edition No. 1. 2013  
Benelux

news  
ImmunoDiagnostics



## De nieuwe EliA SmD<sup>p</sup>

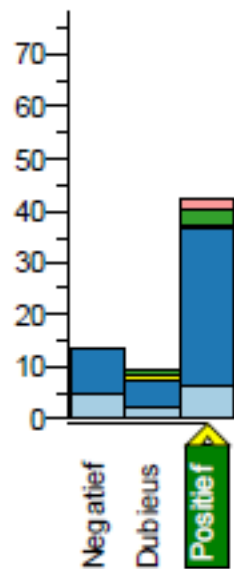
Medio januari 2013 hebben wij onze klanten geïnformeerd over het vervangen van hun EliA Sm test door de EliA SmD<sup>p</sup> (waarbij de P staat voor synthetisch peptide). Aangezien wij veel EliA Sm gebruikers hebben, is afgesproken om de nieuwe EliA SmD<sup>p</sup> uitgebreider te valideren dan onze interne validatie. Hiervoor hebben wij het College van Medisch Immunologen (CMI) benaderd. De drie UMC instellingen uit Maastricht (MUMC), Rotterdam (Erasmus MC) en Groningen (UMCG) hebben meegewerkt aan deze uitgebreide validatie, en stellen de resultaten beschikbaar waarmee u tijd en kosten bespaart voor de uitvoering van een eigen validatie van deze nieuwe test.



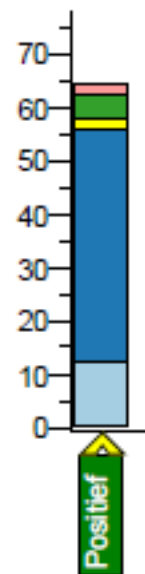
# Collageen: anti-Sm

\* Sinds nieuwe generatie EliA anti-SmD toename consensus

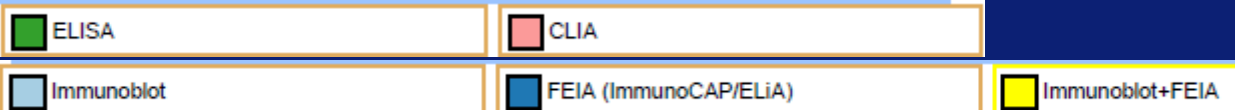
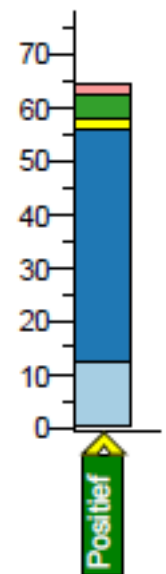
2014.1 B



2014.1 C

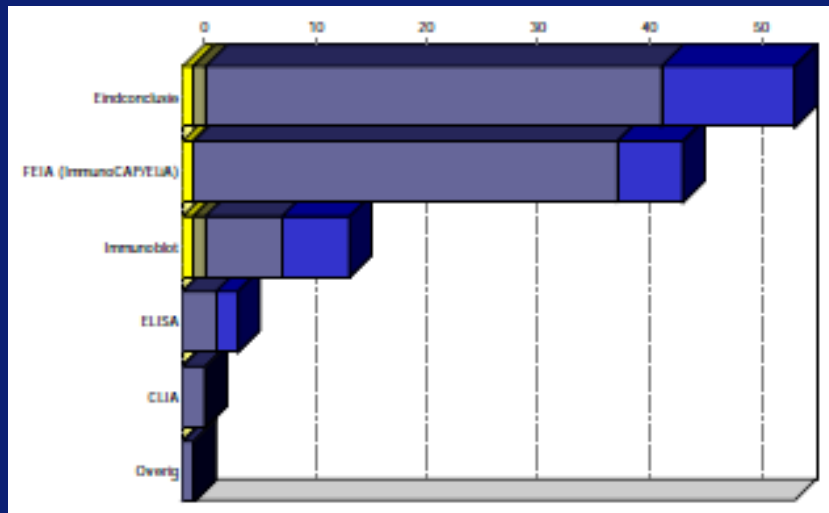
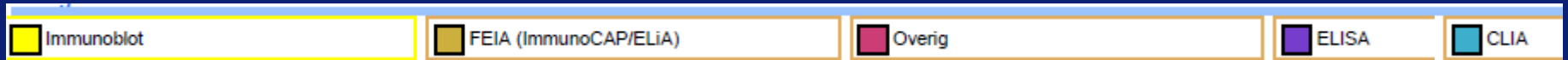


2014.1 D

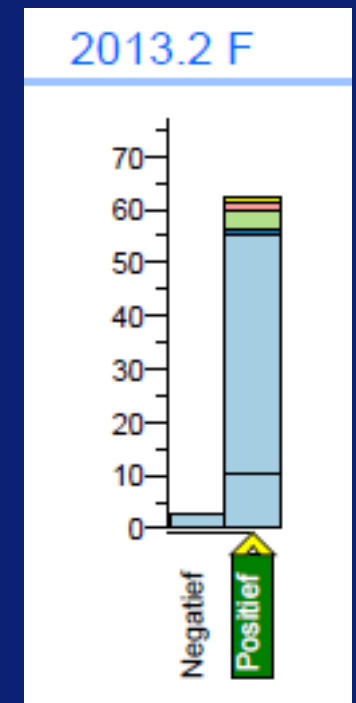
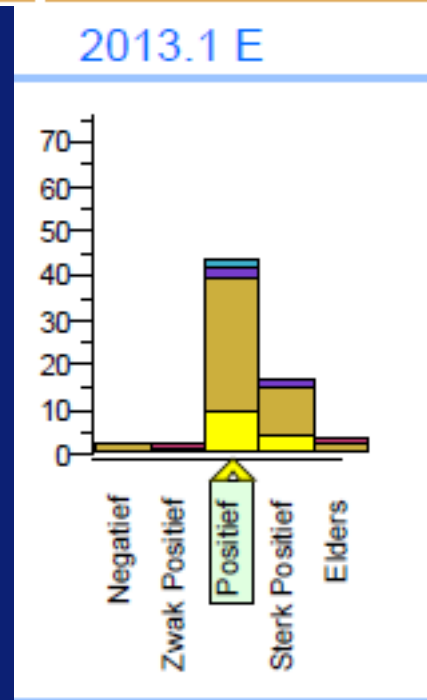


# Collageen: anti-Sc170

\* 3/30 positief

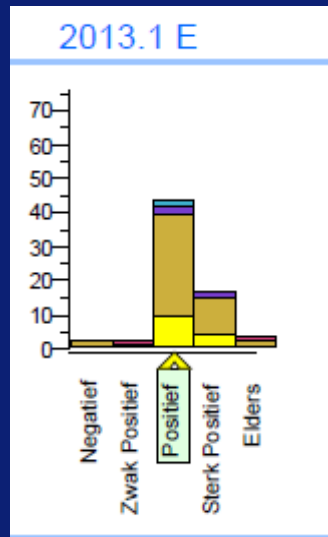


2012.2E, SSc

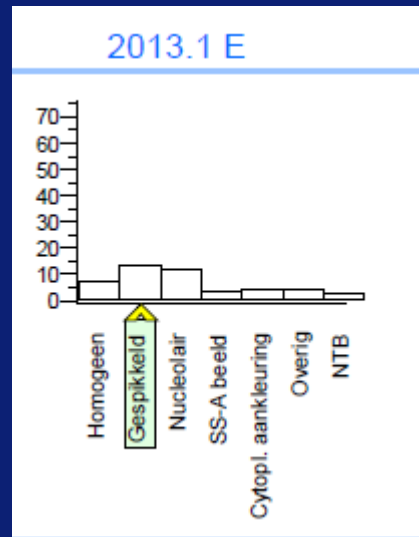


# Collageen: anti-Sc170

\* Sjögren, anti-SSA/Ro52+60 positief, (nog) geen SSc

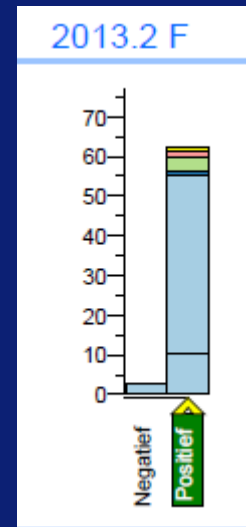


anti-Sc170

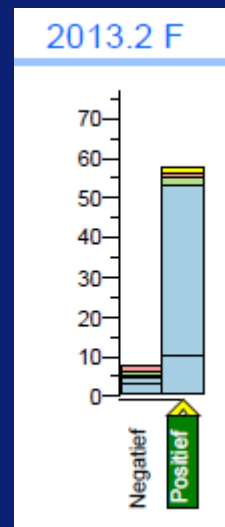


ANA IIF

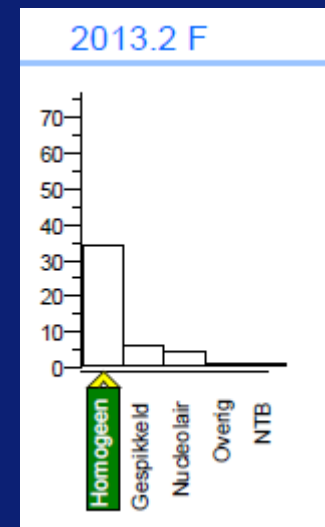
anti-Sc170



anti-Jo-1



ANA IIF



\* SSc, ook anti-Jo-1 positief, (nog) geen PM



Erasmus MC



# Phadia: anti-ScI70 > -ScI70<sup>s</sup>



## Identify more systemic sclerosis patients

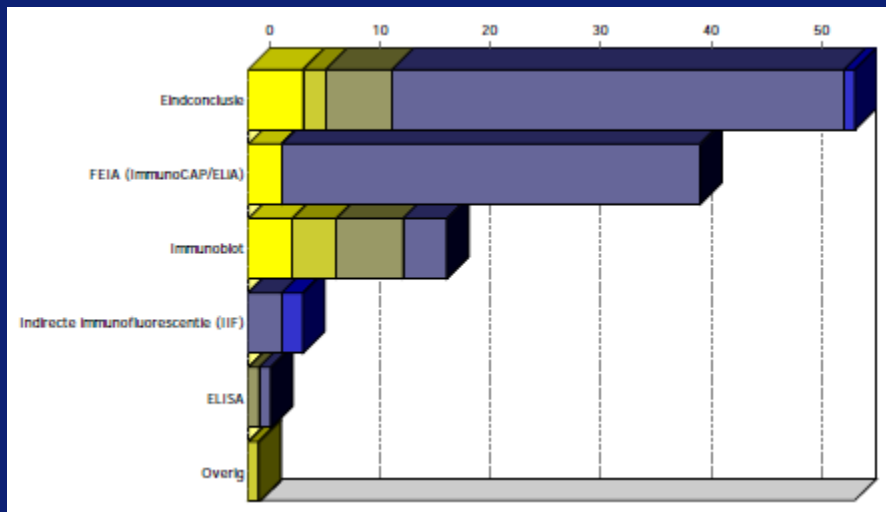
# EliA<sup>TM</sup> ScI-70<sup>s</sup>

**NEW!**

Validatie in CMI verband in progress

# Collageen: anti-CenpB

\* 2/30 positief, beide gelimiteerde cutane SSc

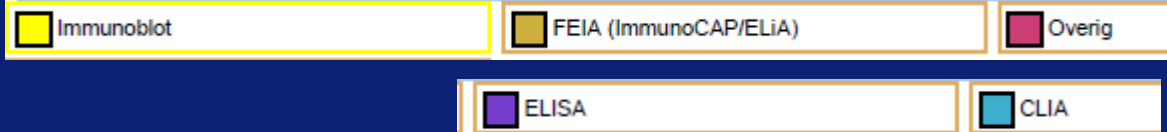
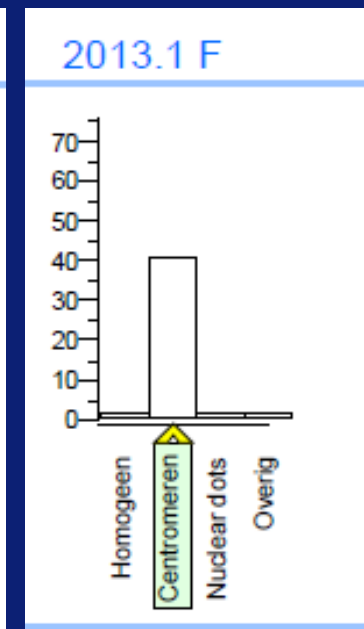
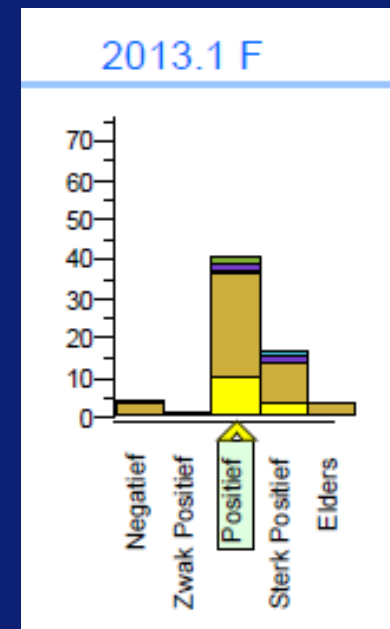


ANA IIF

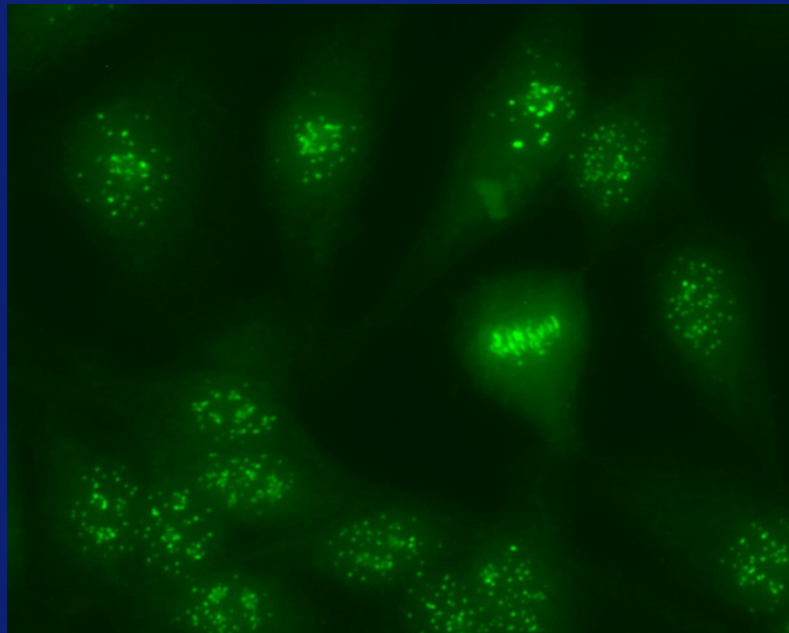
2012.1E

42 X Centromeren  
4 X Homogeen  
1 X Gespikkeld

ANA IIF

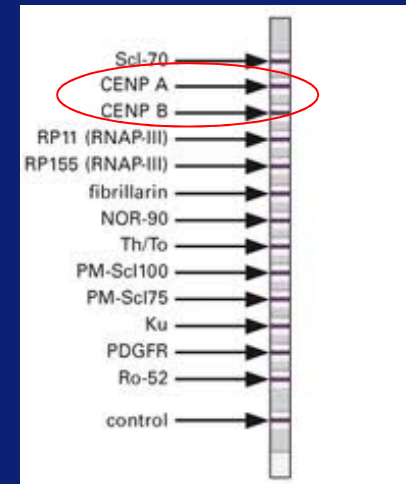


# ANA IIF: ACA

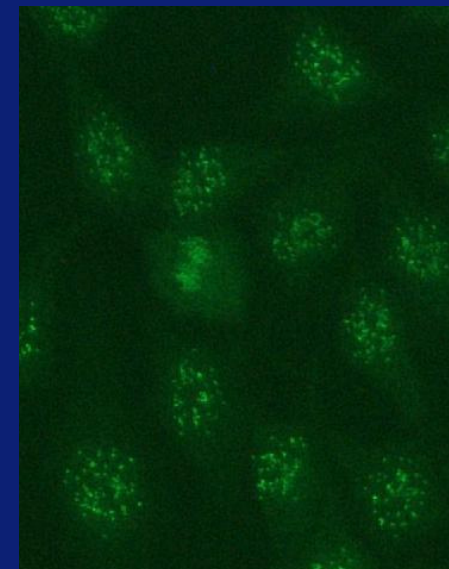


anti-CenpA  
en  
anti-CenpB

2012.1E en 2013.1F



anti-CenpA  
only



Associatie: gelimiteerde  
cutane SSc in ontwikkeling

# Collageen: anti-Jo-1

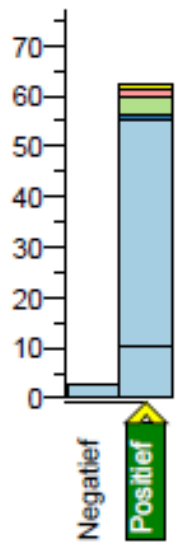
\* 2/30 positief, 1x SSc en 1x PM

anti-Scl70

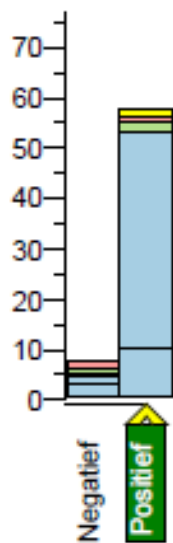
anti-Jo-1

ANA IIF

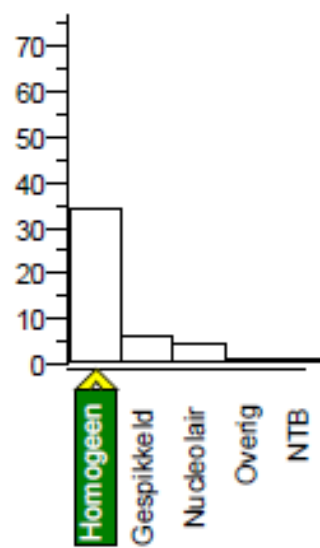
2013.2 F



2013.2 F



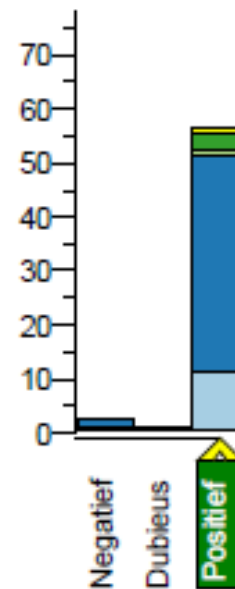
2013.2 F



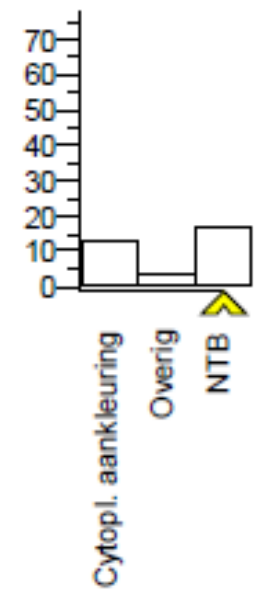
anti-Jo-1

ANA IIF

2014.1 F

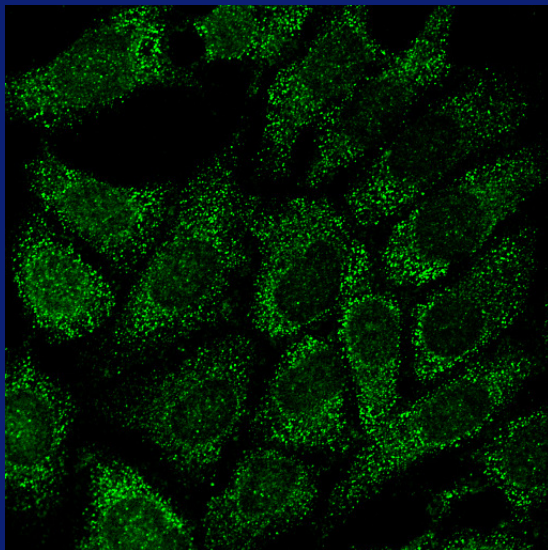


2014.1 F



# Polymyositis / anti-synthetase syndroom

ANA negatief, anti-aminoacyl-tRNA-synthetase



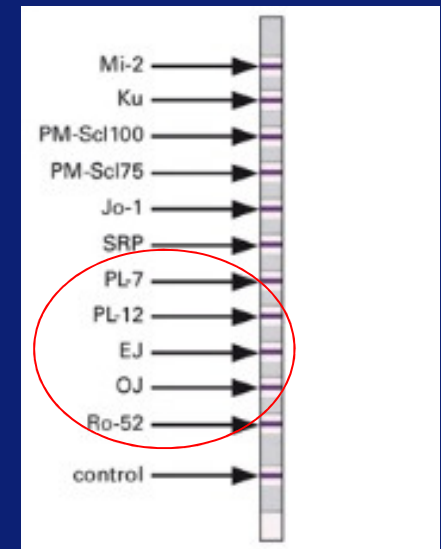
Anti-Jo1 (histidyl-tRNA-synthetase)  
Anti-PL-7, -PL-12, -EJ, -OJ, -ZO, -KS

Niet altijd goed  
zichtbaar op HEp-2 !

Associatie:

Jo-1: prominente myositis

PL-7/-12: prominente longfibrose



# Conclusie

Over het algemeen goede consensus

Variatie in kwalitatieve resultaten bij zwak positieve monsters

Variatie in kwalitatieve resultaten door testsubstraat

Variatie in kwantitatieve resultaten door verschillen in meetmethoden en harmonisatie probleem (RF, anti-dsDNA), dan wel door gebrek aan uniforme kalibratie (anti-CCP)

# Met dank aan

Diana Dufour-vd Goorbergh

Analisten AID groep

Herbert Hooijkaas

Buro SKML

HIM bestuur