



› **NIGERIAN DELEGATION**
20TH OCTOBER 2022
TASKFORCE HEALTH CARE



WARM WELCOME TO OUR VISITING NIGERIAN DELEGATES

OUR AGENDA TODAY

INTRODUCTIONS

[YVETTE FLEMING](#)

TNO I4D

[MATHILDE MIEDEMA](#)

TNO CHILD HEALTH

[SYMONE DETMAR](#)

SHORT PITCHES

SEE NEXT SLIDE

SPEED DATING

ALL

LEARNINGS

YVETTE FLEMING

GROUP PICTURE

ALL

LUNCH

12.40 LATEST



Moment of reflection for all your fellow Nigerians affected by the natural disaster due to extreme flooding this week!

› **SHORT PITCHES (LINKEDIN)**

YVONNE SCHÖNBECK



ELINE VLASBLOM



MAURITS VAN DER HEIDEN



REMY VINK



MILOU DERKS



WIM VAN HARTINGSVELDT



› TNO IN SUMMARY

At TNO, we innovate for a healthier, safer and more sustainable life. And for a strong economy. Since 1932, we have been making knowledge and technology available for the common good.



TNO is a Dutch hybrid innovation institute – second largest of Europe



Independent organization with 3,600 professionals



Turnover of 562 M€ in 2021 – 32% governmental, 25% international business



With depth and breadth of knowledge, multidisciplinary



Focused on smart solutions to complex issues – transitions and system innovations



Together with partners: companies, organizations at home and abroad



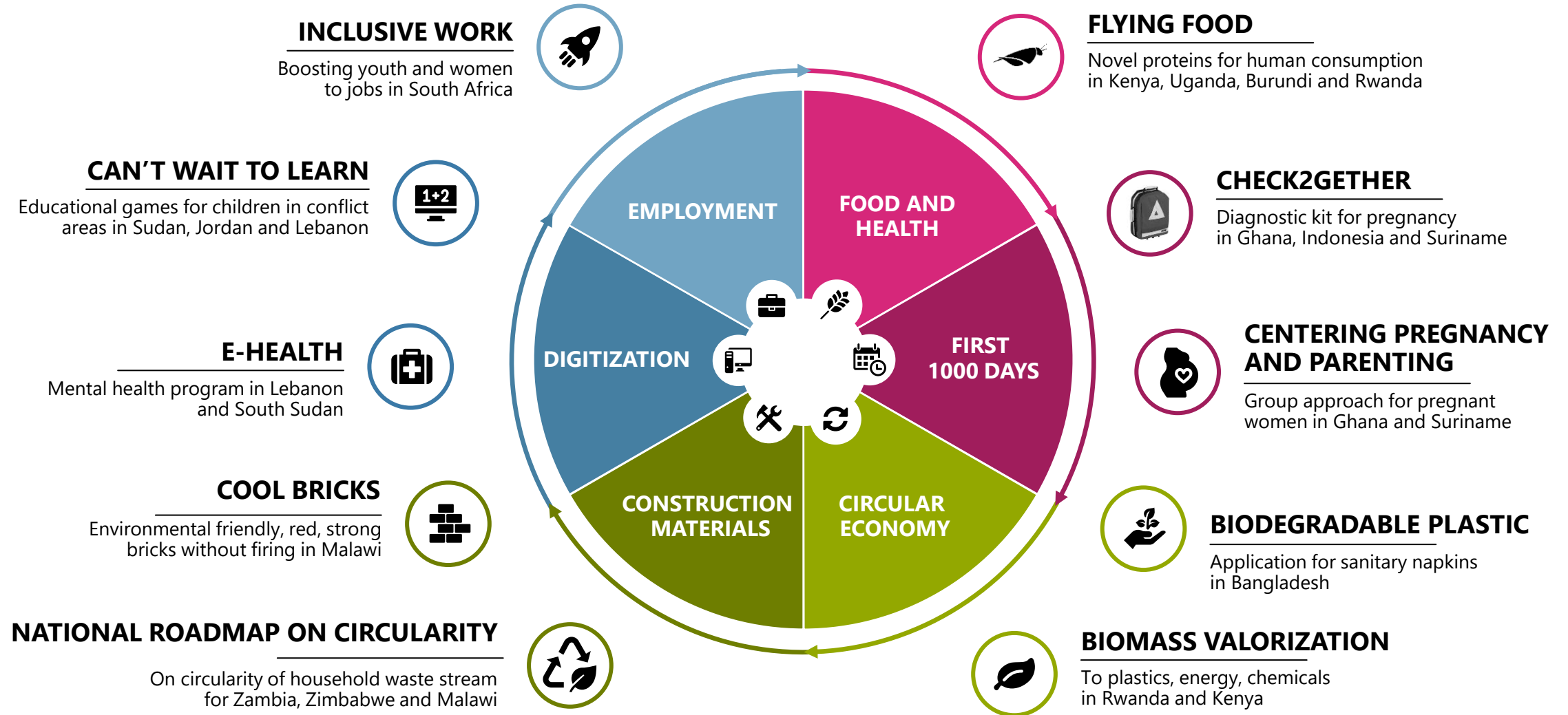
Delivering contract research IP portfolio



Technology transfer program – accelerating the market launch of innovation - spin offs – investment fund

IMPACT: Every 1 euro investment in TNO leads to € 3 turnover in private sector

IMPACT: 1 job at TNO results in 4 jobs in private sector



FLYING FOOD: INSECTS FOR FOOD



- › Farming crickets since 2015 - started in Uganda and Kenya
- › Started in 2021 in Nigeria - Ibadan
- › Currently 100 small cricket farmers, 5 market outlets
- › Consumed as fried snack, powder in porridge, bread and cookies
- › Boosting entrepreneurship, employment, income generations and access to affordable proteins



VISION

Every child should be allowed to grow up



“We may not be able to prepare the future for our children, but we can at least prepare our children for the future”

(Franklin D. Roosevelt)

TNO innovation
for life

TNO Child Health



› TNO: CHILD HEALTH

Tailor-made support for (future) parents in the upbringing and guidance of children and young people where necessary and offering a systematic and integrated approach with guidelines, signaling methods and substantiated early interventions in the entire network of prevention and care for youth.



WHO ARE WE?

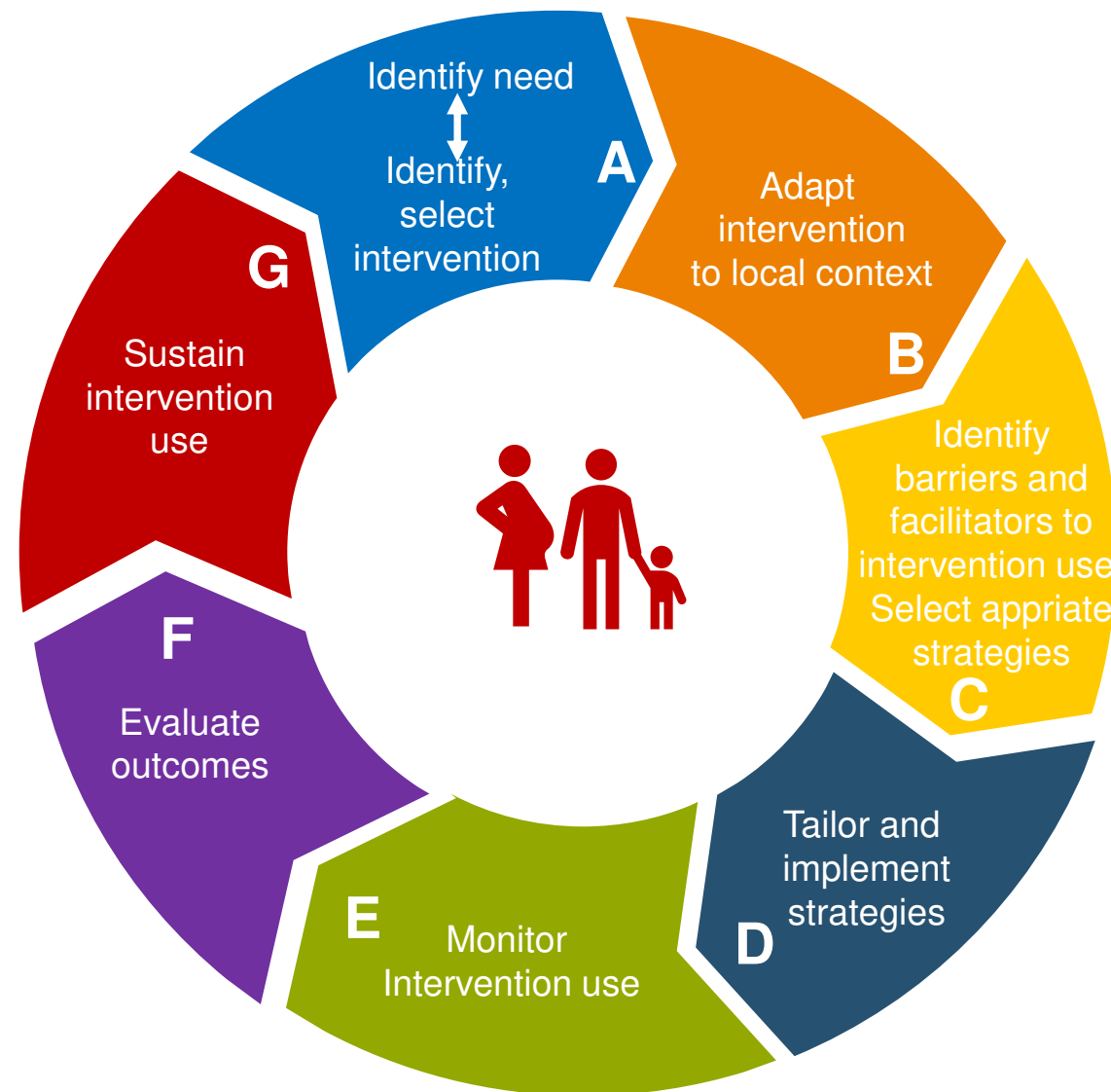


Pedagogues
Psychologists
Sociologists
Midwives
Health / nutrition scientists
Mathematicians & statisticians
Econometrists
Medical computer scientists
(Youth) doctors
Dentists



OUR APPROACH

- Needs-driven
- Multi-disciplinary
- Innovative
- Sustainable
- Co-creation
- Collaboration



FOCUS



First 1000 days

A healthy start makes an often irreconcilable difference for later.

We develop tools and client-oriented approaches to provide comparable opportunities for all children.



Digitalization

The public health care makes increasing use of technology but is still very fragmented.

We work together with public health care and IT partners on integrated solutions.



Transform Professionalize and implement

The context of care for youth is changing rapidly and radically.

We develop solutions to optimize the working method and prepare professionals and young people for the future.



Resilient Youth and Parents

Modern society demands a lot from the youth and their parents.

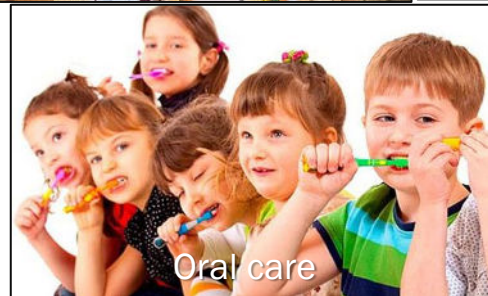
We develop solutions to increase their resilience (in particular around major life events) and thus to participate in a healthy way.



Personalized Prevention and Care for Youth

Every individual is different and interventions work better if they are taken into account.

We develop personalized interventions on specific themes.



WWW.GROUPCARE1000.COM



GROUP CARE = CENTERING PREGNANCY MODEL

“Tell me and I forget. Teach me and I remember. Involve me and I learn.”
Benjamin Franklin

Health
Assessment



Interactive
Learning



Community
Building



Table 1. Countries where research on a group care model was conducted

#	Country	Number of studies
1	Canada	10
2	Australia	10
3	UK	9
4	Sweden	7
5	Malawi	9
6	Tanzania	8
7	Egypt	6
8	Nigeria	7
9	Rwanda	7
10	Kenya	5
11	Nepal	5
12	Iran	5
13	Netherlands	5

[Group Care: a world where no woman needs to be alone! - YouTube](#)

› CHECK2GETHER

Improving maternal health in remote areas

Maurits van der Heiden

TNO innovation
for life





OUR SOLUTION: CHECK2GETHER INTEGRAL ANTE NATAL CARE

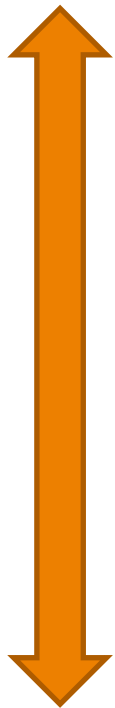
- › Enable **integrated diagnostics** for community health nurses and midwives, available at remote sites
- › Improve **on-site decision making & therapy** tailored to skills, availability and mandate
- › Improve **referral pathways** connecting CHN, midwives, laboratory and hospital



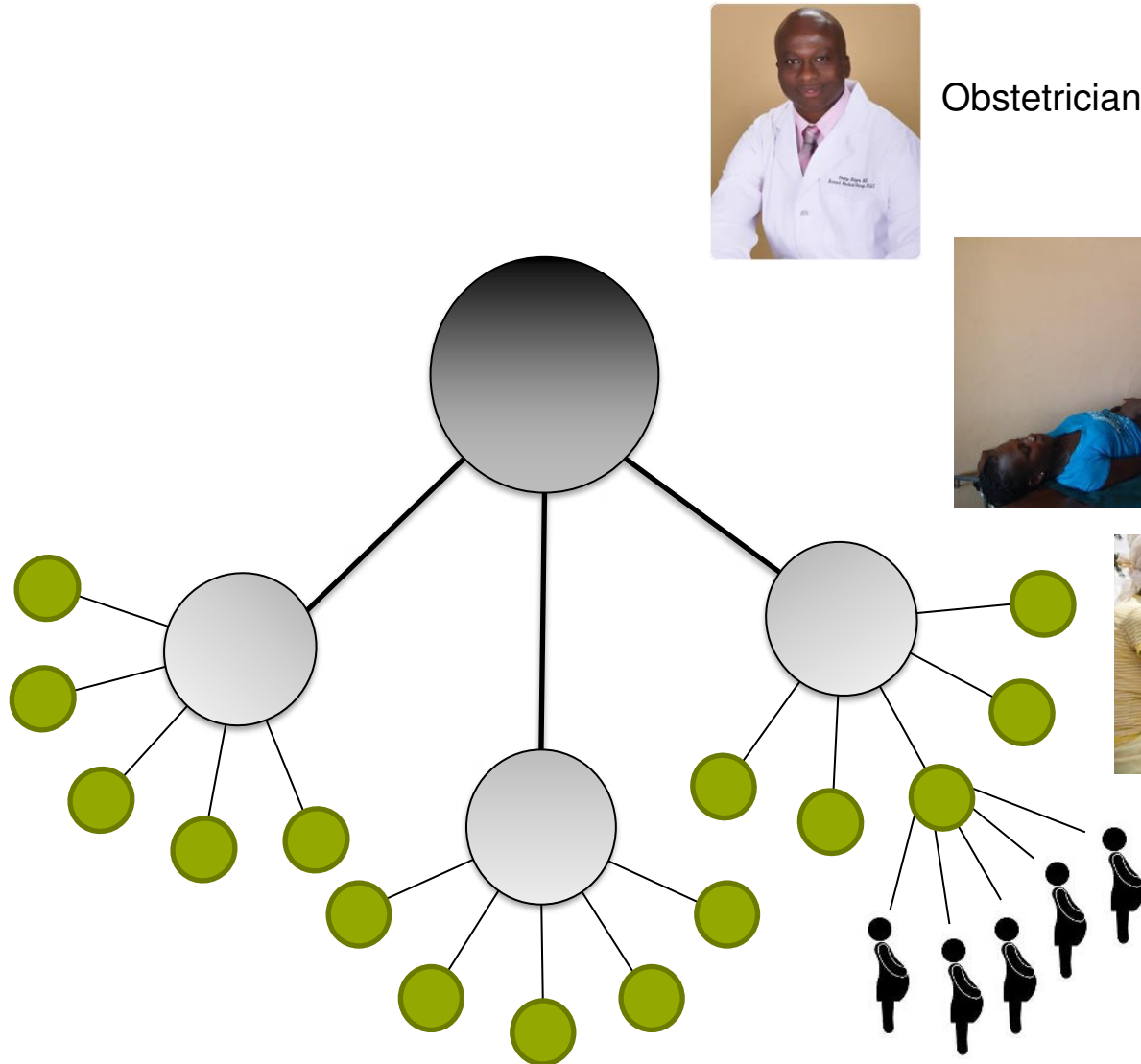


C2G: THE SATELLITE OF LOCAL HEALTH CLINIC

Central



Rural



Obstetrician in 2nd - 4th level hospital



Health Nurses and Midwives in health clinics



Midwives and Community Health Workers in CHPS and health clinics



Pregnant women, relatives (husband, elderly, families), traditional birth attendee's



CHECK2GETHER ANTE NATAL CARE KIT

- › Integrated point of care diagnostics of most important parameters
- › On site, non-invasive measurements
- › Direct advice and urgency indication
- › Compliant to National Guidelines



Cloud connectivity to clinic & dashboard



Pre-eclampsia

Anaemia

Gestational diabetes

Findings

Advice

Therapy

Referral

Urgency

Improve & monitor compliance



TRACK RECORD CHECK2GETHER

7 larger prototypes evaluated in Northern **Ghana** (2017-2018)

- › 30 Midwives and 6 technicians trained and operational
- › 1000 pregnant women monitored successfully
- › Funded by Dutch government (LSH4D)



Netherlands Enterprise Agency



5 backpack prototypes under evaluation in Northern Ghana (2021-2023)

- › 25 Midwives trained and operational
- › Monitor 400 pregnant women - C2G with group care
- › project funded by the EU



› THANK YOU FOR YOUR ATTENTION

more info:

[check2gether.org](https://www.check2gether.org)

<https://www.youtube.com/watch?v=8GDCLBxEHXc>

<https://www.tno.nl/en/focus-areas/healthy-living/expertise-groups/child-health/check2gether-improves-antenatal-care-in-indonesia/>

TNO innovation
for life

VIDEO



[Build your own Buddy \(Bob\): programma voor mentale hulp aan kinderen in Zuid-Soedan | TNO - YouTube](#)



DIGITAL SUPPORT TOOLS TO MONITOR CHILD GROWTH AND DEVELOPMENT

Dr. Yvonne Schönbeck - Dr. Olivier Blanson-Henkemans - Dr. Iris Eekhout - Prof.dr. Stef van Buuren

PREVENTIVE YOUTH HEALTH CARE IN NL

Monitoring **growth and development**

Providing **vaccinations**

Early detection of health and social problems (or risk factors) & referral

Providing **information and advice** on health, growing up safely,
and parental concerns

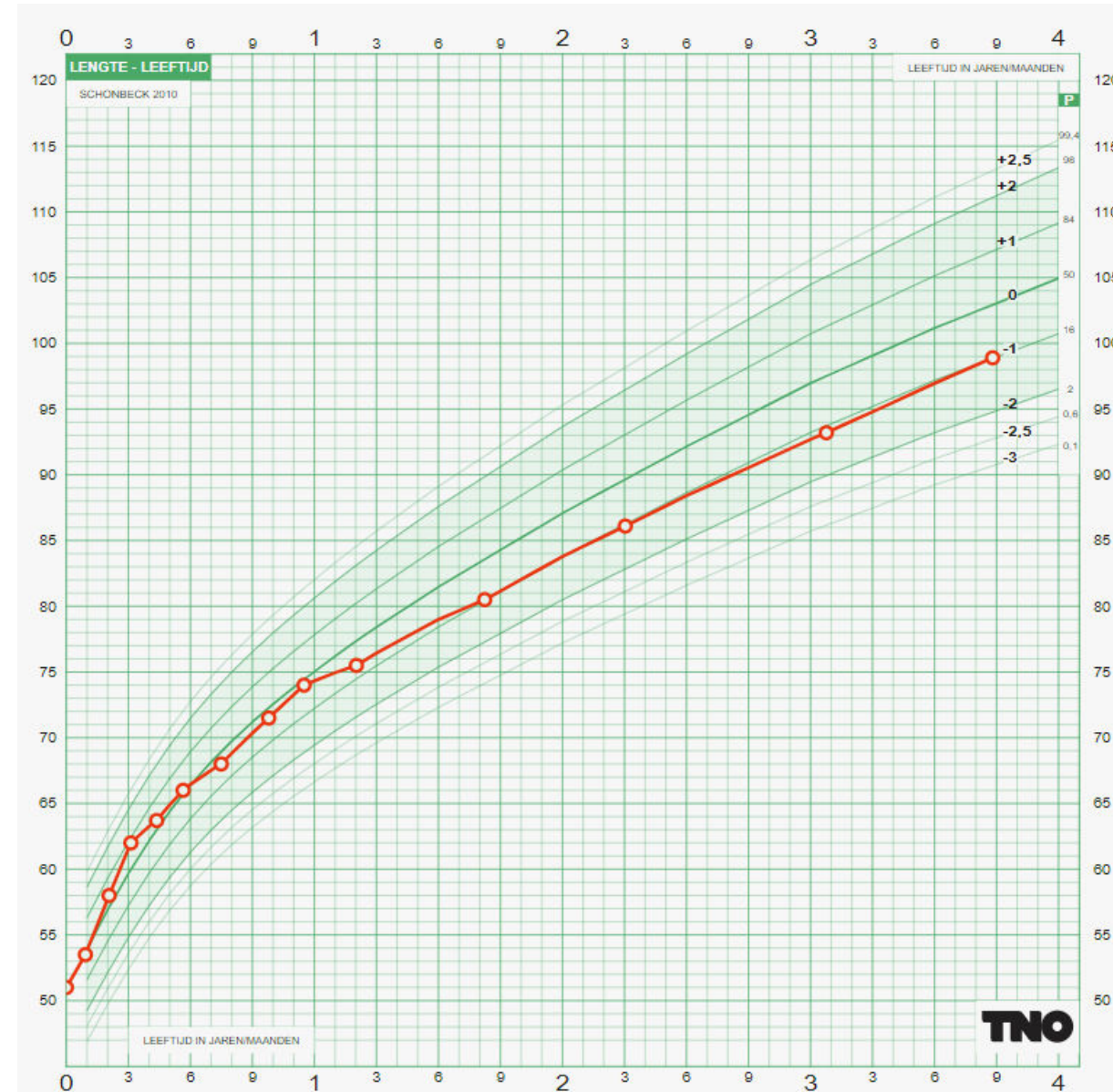
Registration in electronic patient files (EPF)



DUTCH GROWTH CHARTS

Dutch growth references developed

Online tool [JAMES](#) to plot growth



GROEIDIAGRAMMEN

Groei

Kaartserie

Nederland 2010

Leeftijd

- 0-15 maanden
- 0-4 jaar
- 1-21 jaar

Maat

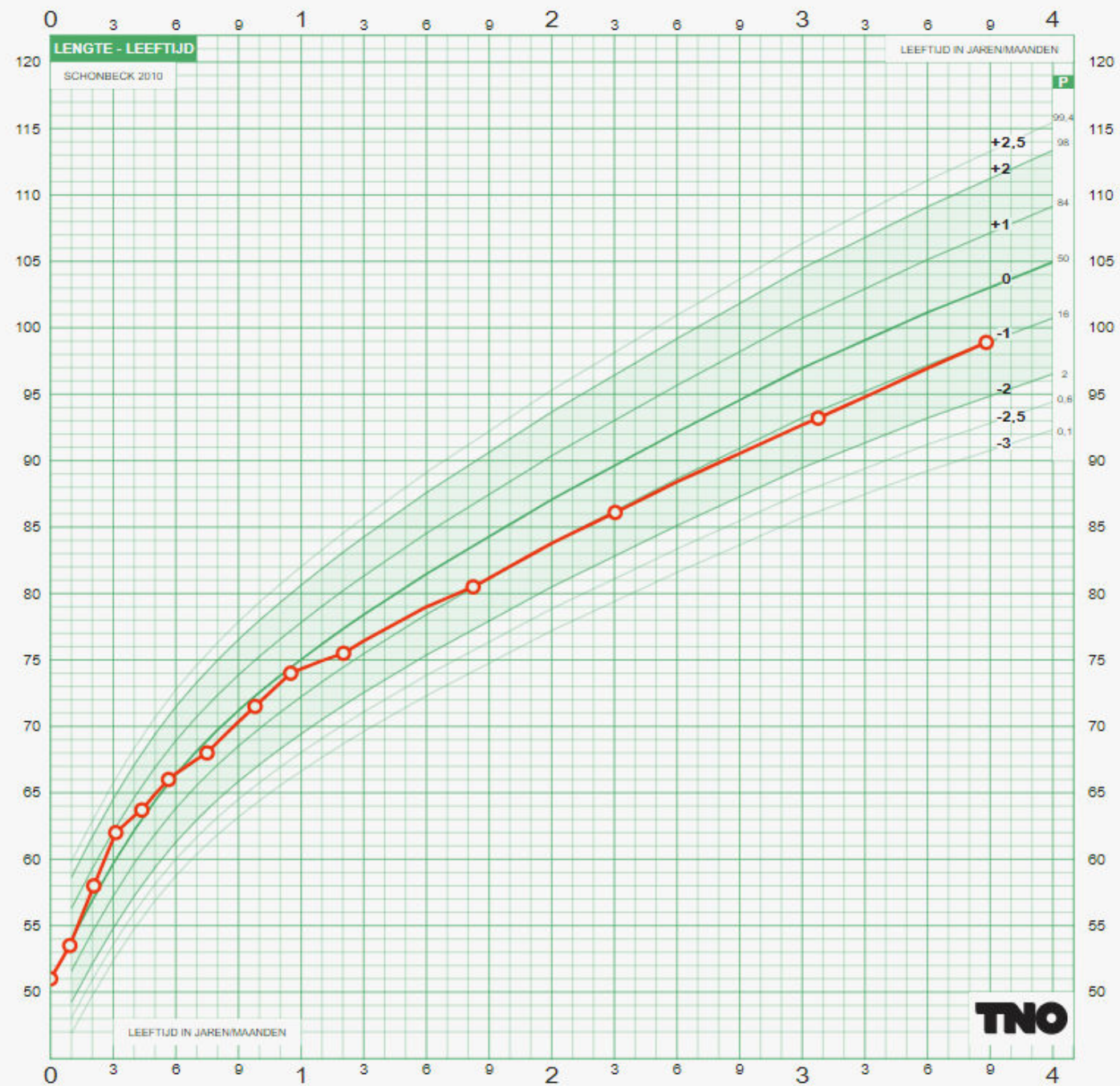
- Lengte
- Gewicht - Leeftijd
- Gewicht - Lengte
- Hoofdomtrek
- A -
- B -

Populatie

- Nederlands
- Turks
- Marokkaans
- Hindostaans
- Down Syndroom

Geslacht

- Jongen
- Meisje



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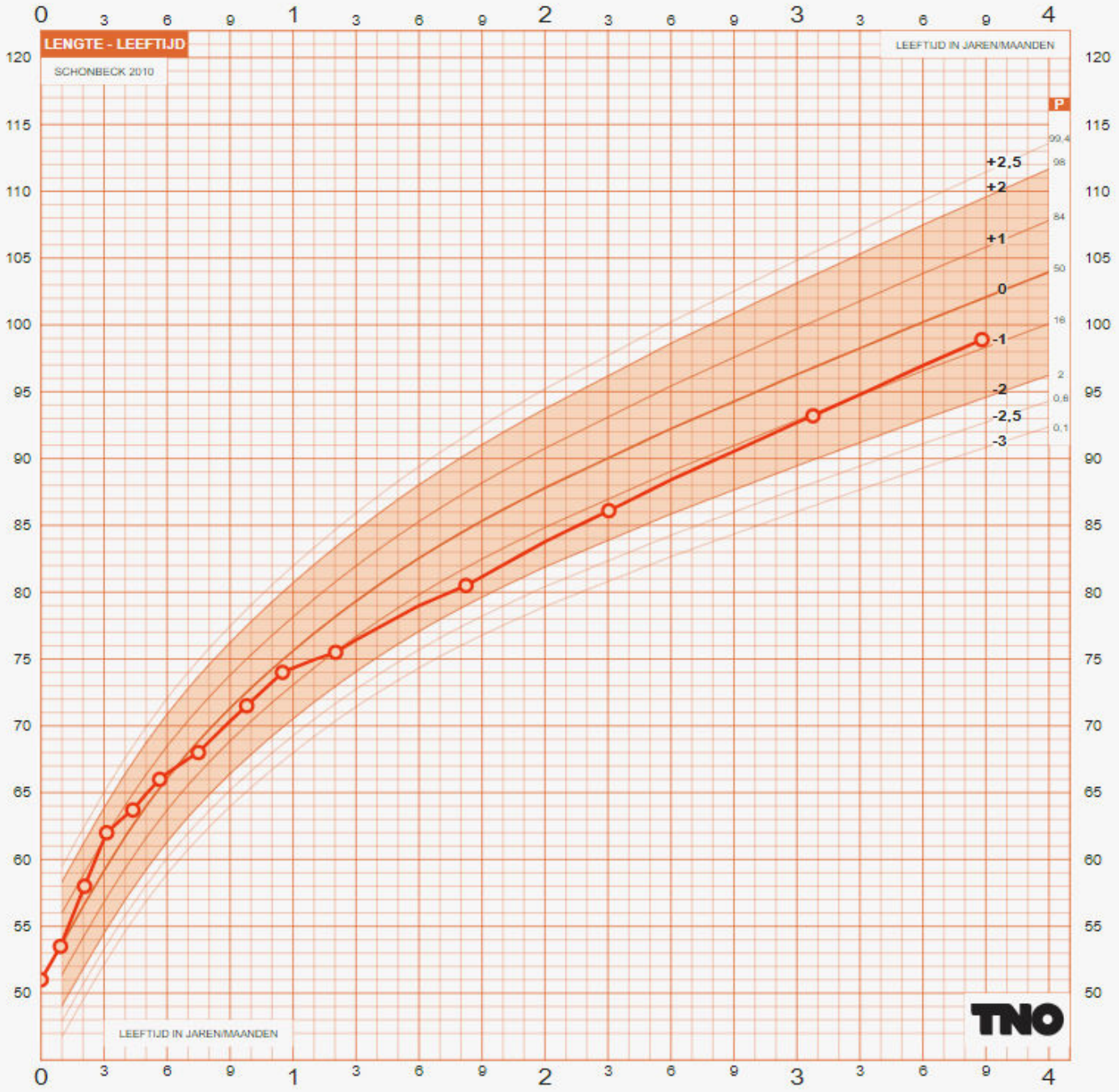
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GROEIDIAGRAMMEN

Groei

Kaartserie

WHO standaard

Leeftijd

0-15 maanden

0-4 jaar

Maat

Lengte

Gewicht - Lengte

- A -

Geslacht

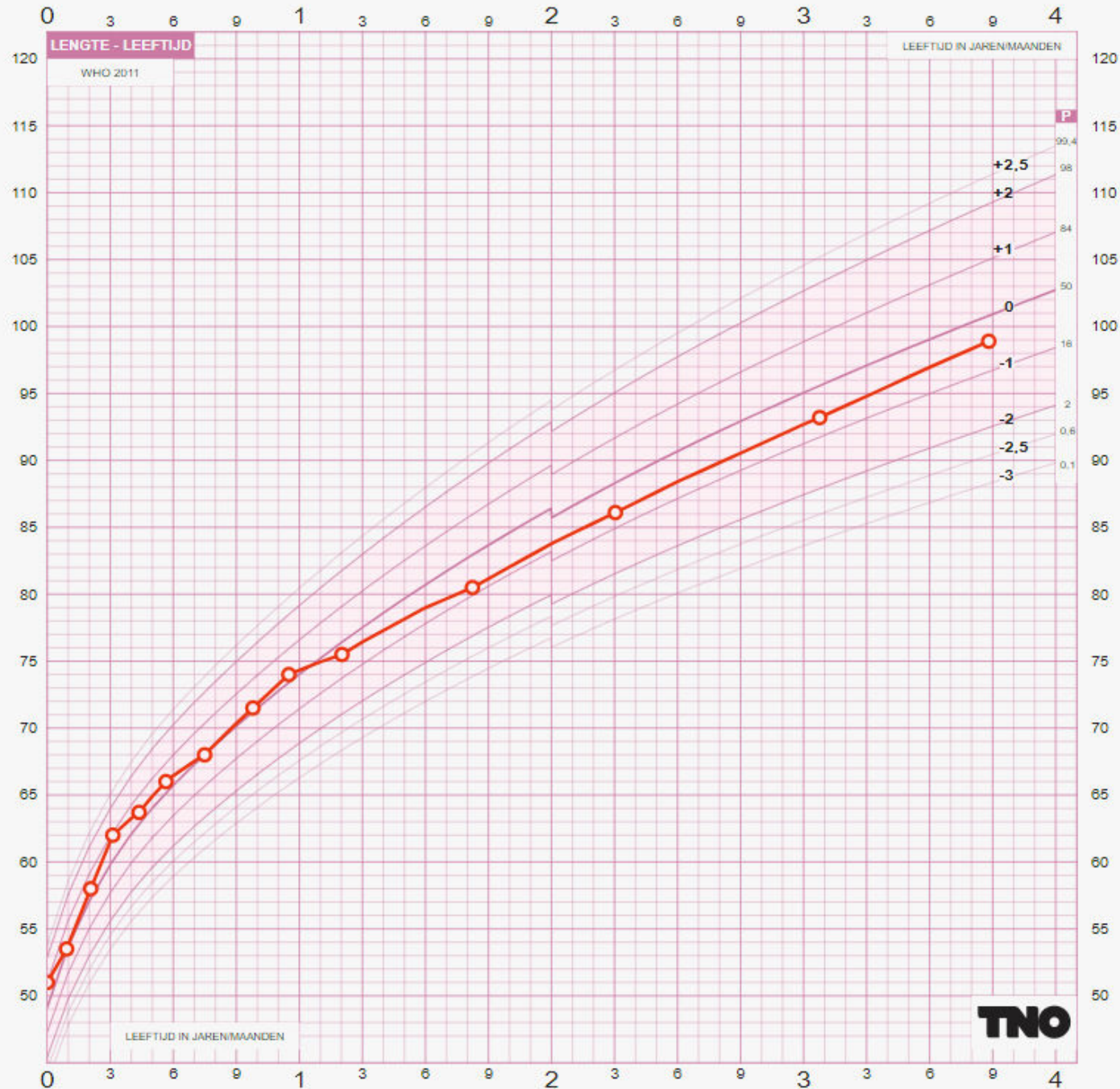
Jongen

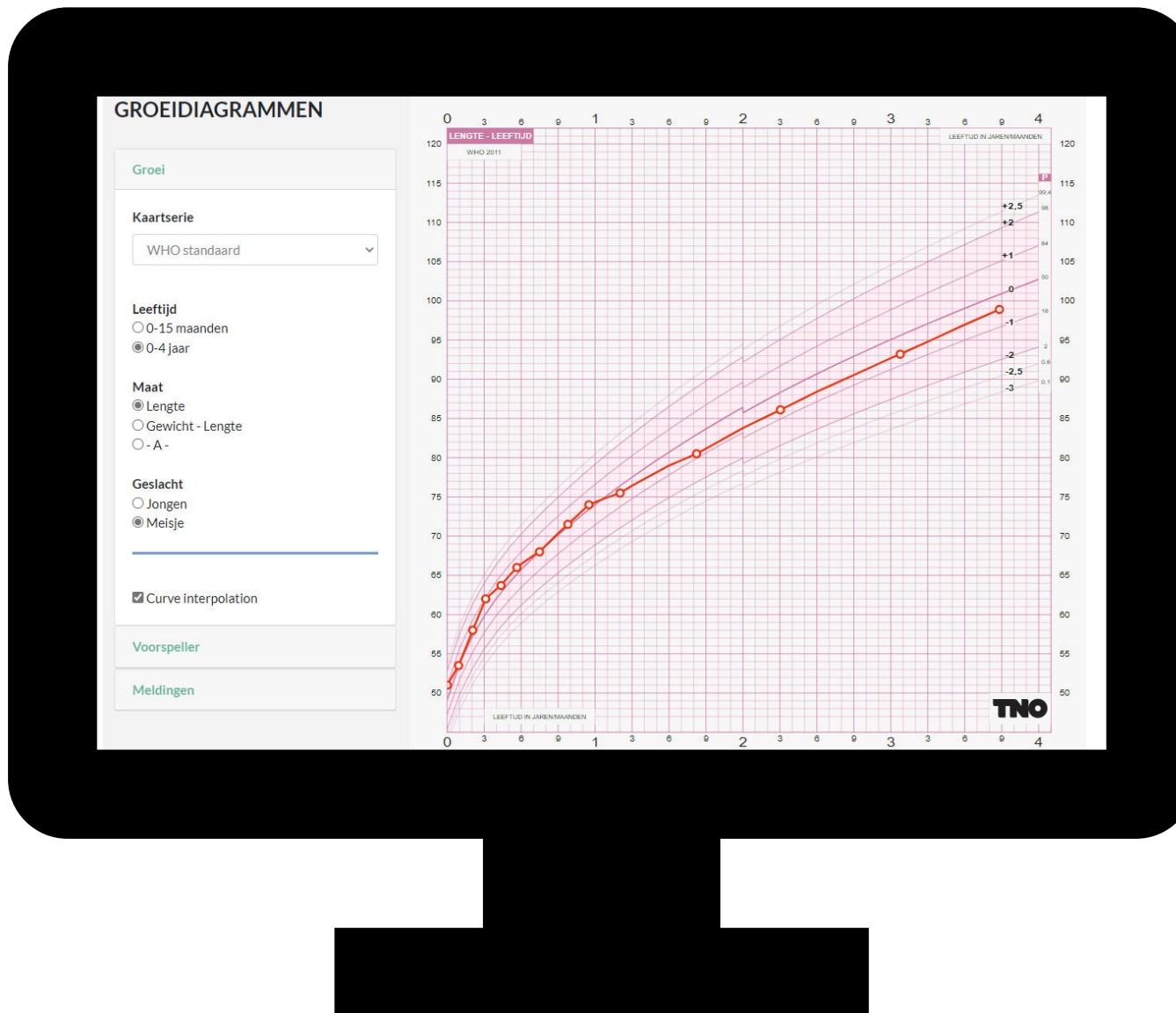
Meisje

Curve interpolation

Voorspeller

Meldingen





GUIDELINES & REFERRAL CRITERIA

Many guidelines developed to detect children 'at risk'

Height

Weight

Language development

...



DIGITAL PLATFORM

Modular deployment of digital innovations TNO via I-JGZ 'socket'
(API Gateway)

Decision support for uniformity and quality of care > early
identification of those at risk

Personalized advice for professionals, and parent empowerment

Additional value of data registration



GUIDELINE LANGUAGE DEVELOPMENT IN EPF

Let op: dit is ge...

Van Wiechen Onderzoek

28. Tekent kruis na			
Communicatie	15 mnd	1½ jr	
37. Zegt 2 'geluidwoorden' met begrip (M)			
38. Begrijpt enkele dagelijks gebruikte zinnen (M)			
39. Zegt 3 'woorden' (M)			
40. Begrijpt fantasieopdrachtjes (M)			
41. Zegt 'zinnen' van 2 woorden (M)			
42. Wijst 6 lichaamsdelen aan bij pop (M)			
43. Noemt zichzelf 'mij' en 'ik' (M)			
44. Wijst 5 plaatjes aan in boek			
45. Zegt 'zinnen' van 3 of meer woorden (M)			
46. Is verstaanbaar voor bekenden (M)			
47. Praat spontaan over gebeurtenissen thuis/speelzaal (M)			
48. Stelt vragen naar 'wie', 'wat', 'waar', 'hoe' (M)			
49. Is goed verstaanbaar voor onderzoeker			
50. Stelt vragen naar 'hoeveel', 'wanneer', 'waarom' (M)			
51. Begrijpt analogieën en tegenstellingen (M)			

de Richtlijn Taalontwikkeling (2018)

Advies

Uit de meest recente meetwaarden van de SRM is een advies geactiveerd vanuit de JGZ-Richtlijn 'Richtlijn Taalontwikkeling (2018)'. Dit advies luidt als volgt:

Uitslag: Voldoende. Volgens de NCJ Richtlijn taalontwikkeling is geen verwijzing nodig. Naar eigen inzicht handelen.

JGZ- Richtlijnen

In onderstaande link kunt u de JGZ richtlijnen bekijken waarop dit advies is gebaseerd, deze opent in een nieuw tabblad.

- Alle richtlijnen
- Richtlijn Lengtegroei (2019)
- Lengtegroei beslisschema kleine lengte of trage groei
- Lengtegroei beslisschema grote lengte of snelle groei
- Richtlijn Ondergewicht (2019)
- Richtlijn Overgewicht (2012)
- Richtlijn Taalontwikkeling (2018)

Gegevens

Missende gegevens

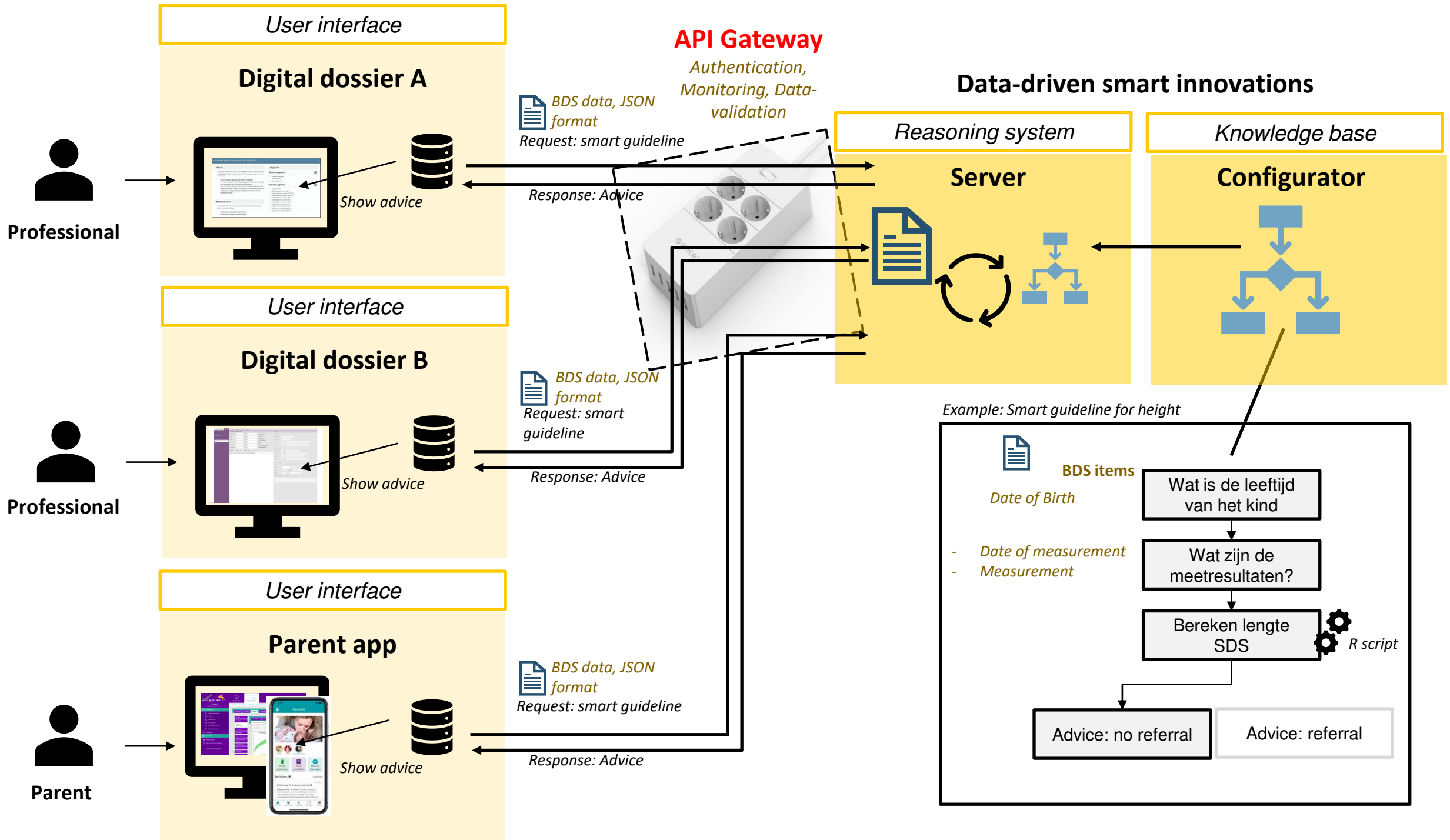
- 41. Zegt 'zinnen' van 2 woorden
- 42. Wijst 6 lichaamsdelen aan bij pop
- 43. Noemt zichzelf 'mij' en 'ik'

Gebruikte gegevens

✓ Vanuit de Richtlijn Taalontwikkeling (2018) is het advies ontvangen: niet verwijzen. Klik hier voor meer informatie.

Advies Ophalen







Development score: D-SCORE

Yvonne Schönbeck – Iris Eekhout - Prof.dr. Stef van Buuren

Your Child's Early Development is a Journey

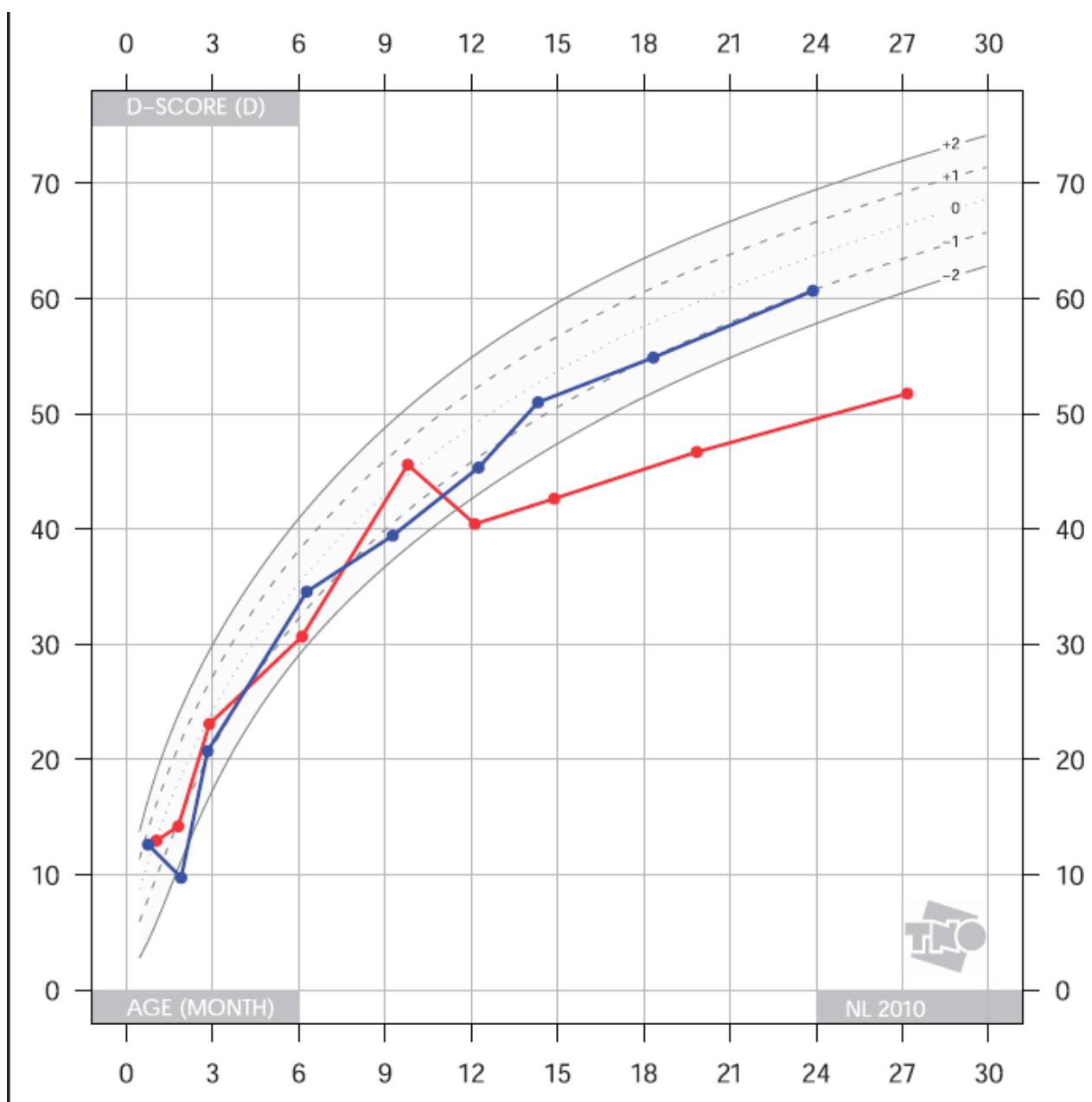
These are just a few of many important milestones to look for. For complete checklists for your child's age visit www.cdc.gov/Milestones or download CDC's free *Milestone Tracker* app.





[Video D-score](#)

Terug



Z-scores van de D-score

- Net zoals bij lengte, kan de ontwikkeling (D-score) makkelijker worden geïnterpreteerd m.b.v. Z-scores.
- Z-score van 0 is gemiddeld voor een specifieke (gecorrigeerde) leeftijd.
- Een Z-score van -1 is 1 SD onder de gemiddelde D-score voor die leeftijd.



COMPARE MEASUREMENTS FROM DIFFERENT INSTRUMENTS

express development.

D-score **links** instruments via the milestones (items)

Measure early child development in a unified way:

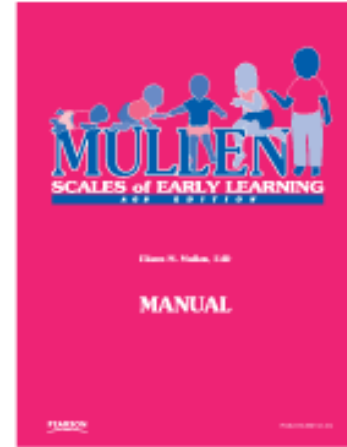
Comparison between populations

Comparison between peers

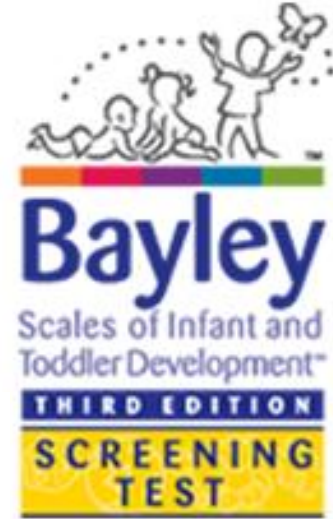
Comparison between interventions



Germain Adriaan (Ed.)
Denver Developmental Screening Test
Public Health Agency of Canada, Denver, Emergency management



Flora K. Mullen, Ed.
MANUAL



Bayley
Scales of Infant and Toddler Development™
THIRD EDITION
SCREENING TEST

with thanks to **WIKIPEDIA** articles!

BOEKWINKEL **FOR AFRICA**

BREPUBLISHING

ZOEK 0-12 (15) MND.

Naam: _____
Geburtsdatum: _____
Zwangerschap: _____

3 = Kind leuk doet
4 = Anders beschrijft onder opmerkingen

Indien voor extra consultatie:
• Kansbaar scoren van 0 tot 145 wijkt af
• Resultaat is links naar laagere score, afhankelijk van de test
• Zo veel mogelijk, vijf observaties koppelen met (P) koppeling op basis van de code of onder de positieve resultaten te scoren
• Kennen van het kind

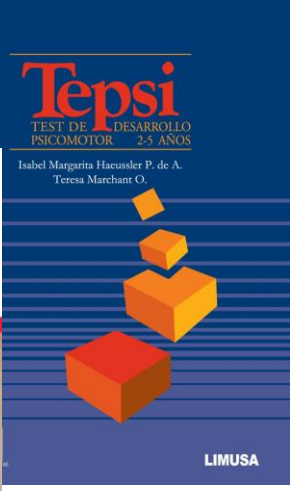
Algemeen	4 wkn	8 wkn	12 wkn	20 wkn	30 wkn	37 wkn	42 wkn	60 wkn	Opmerkingen
Leeftijd	1 week	2 week	3 week	4 week	5 week	6 week	7 week	8 week	
Gedragsoverzicht	R	L	L	R	L	R	L	R	
Fijne motoriek / Adequate Persoonlijkheid en Sociaal gedrag									
1. Open handen									
2. Vrij met open in handen 30° = 2° = 30°									
3. Handen of de toe open									
4. Kijkt naar eigen handen (P)									
5. Speelt met handen vasthouden									
6. Pakt in rugligging voorwerpen tussen handen									
7. Pakt kleine voorwerpen									
8. Heeft kleine voorwerpen vast in rug aan in andere hand									
9. Speelt met beide vingers (P)									
10. Pakt voorwerpen met één en vinger									
11. Over kleine voorwerpen									
12. Speelt "open en samen" (P)									
Communicatie									
13. Reageert op stemmen (P)	1 week	2 week	3 week	4 week	5 week	6 week	7 week	8 week	
14. Lieve lach (P)									
15. Maakt geluiden tong (P)									
16. Maakt gemiddelde geluiden (P)									
17. Zegt "da-da" of "ga-ga" (P)									
18. Beantwoordt op zijn naam (P)									
19. Reageert op omringeling van stem (P)									
20. Zwaait "begroeting" (P)									
21. Zegt "gutenavond" met hand (P)									
22. Begrijpt andere woorden voor objecten (P)	1 week	2 week	3 week	4 week	5 week	6 week	7 week	8 week	
Grote Motoriek									
23. Beweging armen naar voren									
24. Beweging benen naar voren									
25. Blijft hangen bij opheffen onder de oksels									
26. Reageert bij opheffen tot 45°									
27. Heft in bukkende houding tot 45°									
28. Kijkt naar voor met "O" ghespan houding									
29. Beweging vingers of vingers bij vasthouden van voorwerpen									
30. Bukt zich om een voorwerp naar voren te pakken (P)									
31. Kan hoofd goed ophouden in sit									
32. Zet op knieën met gespreide benen									
33. Zet op knieën									
34. Kruipt vooruit, bukt op de grond (P)									
35. Bukt zich op in staan (P)									
36. Kruipt vooruit, bukt om in de grond (P)									
37. Loopt lang (P)									



ASQ-3™ CD-ROM
Ages & Stages Questionnaires™
A Parent-Completed Child Monitoring System



Griffiths III
Griffiths Scales of Child Development
3rd Edition



Tepsi
TEST DE DESARROLLO PSICOMOTOR 2-5 AÑOS

Isabel Margarita Haessler P. de A.
Teresa Marchant O.

LIMUSA

SUMMARY

The D-score can monitor development similar to growth

The D-score can be measurement with any child development instrument

The D-score can be used to compare populations, intervention outcomes, and individual progress

The D-score is applied in many contexts and projects with different international partners

THANK YOU FOR YOUR ATTENTION
CONTACT: YVONNE.SCHONBECK@TNO.NL
+31 619 628 494

PREVENTION AND REMISSION OF DIABETES MELLITUS TYPE 2

- Diagnosis of prediabetes
- Discussion on lifestyle
- Education on diet and blood glucose levels
- Support in making healthy choices:
 - unprocessed foods;
 - reduce intake of starchy carbohydrates;
 - promote physical activity
- Coaching of behaviour change



<https://lifestyle4health.nl/english/>

Platos
Health

<https://platoshealth.com>

› **SHORT PITCHES (LINKEDIN)**

YVONNE SCHÖNBECK



ELINE VLASBLOM



MAURITS VAN DER HEIDEN



REMY VINK



MILOU DERKS



WIM VAN HARTINGSVELDT





Choose the topic(s) you want to **openly discuss**, **further explore**, **share experiences** and **learn more about**. Find the TNO expert in the room.





› **THANK YOU FOR VISITING TNO!**

TNO innovation
for life