ebhc CONFERENCE 2026

THE ECOSYSTEM OF EVIDENCE

Navigating the future
of the ecosystem of evidence

Artificial intelligence and digital transformation
in research and healthcare

11th EBHC International Conference
Taormina, 21st – 24th October 2026

#EBHC2026

30th 1996-2026 GIMBE EVIDENCE FOR HEALTH

International Society for Evidence-Based Health Care

Diagnostic drift, lame labels, and the evidence ecosystem

Update of 8-item Checklist for modifying definitions of disease



Paul Glasziou
Emeritus Professor,
Bond University,
Australia

Reducing Overdiagnosis



A. Reduce Overdetection
(don't screen/test; target)



B. Reduce Overdefinition
(use checklist; mixed committee)

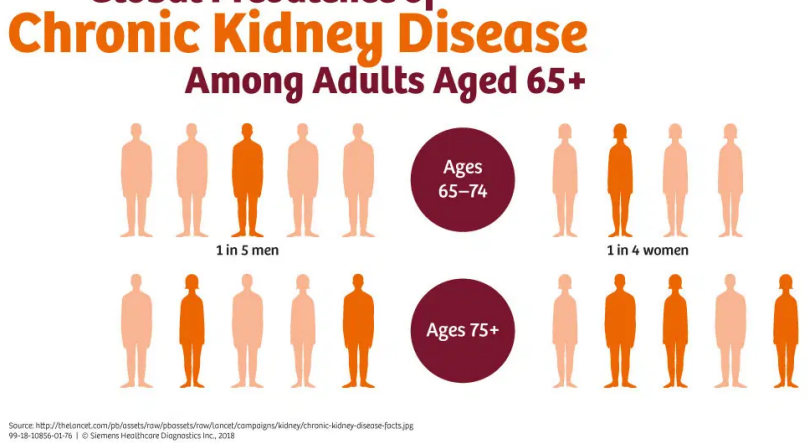


C. Reduce Medicalization
(don't label; non-medical labels)

By Vincent Le Moign, CC BY 4.0, https://commons.wikimedia.org/w/index.php?curid=68649641

Are these **over-definition**?









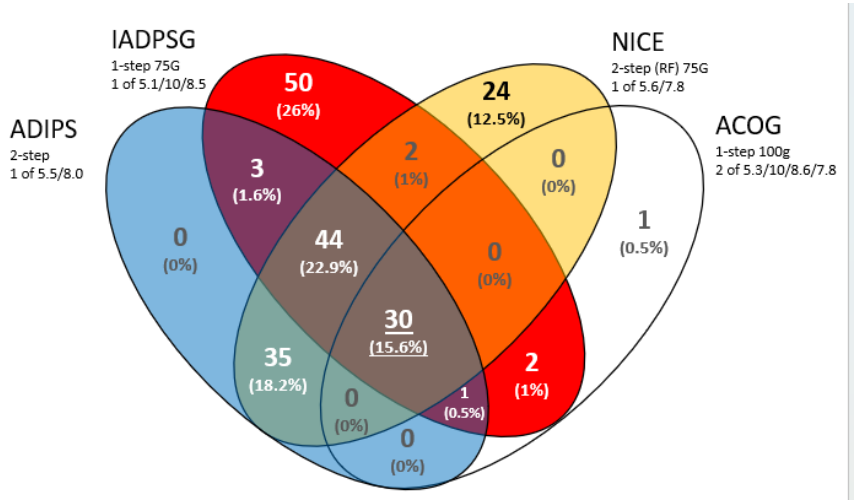




Has the “P” of my PICO shifted? *(And was that appropriate?)*

Gestational Diabetes definition

A brief history



1964
O'Sullivan and Mahan describe criteria for GDM

1979
NDDG modification of O'Sullivan criteria proposed

1980
WHO
propose GDM criteria

1982
Carpenter and Coustan propose revision of O'Sullivan criteria

1985
WHO
revise GDM criteria
lowering fasting and 2-h threshold

1996
EASD propose new GDM criteria

1999
WHO
revise GDM criteria
lowering fasting threshold

2010
IADPSG propose new criteria based on the HAPO study

2011
ADA endorse the IADPSG criteria

2013
WHO
adopt the IADPSG criteria

1960 1970 1980 1990 2000 2010

OPEN ACCESS Freely available online

PLOS | MEDICINE

Expanding Disease Definitions in Guidelines and Expert Panel Ties to Industry: A Cross-sectional Study of Common Conditions in the United States

Raymond N. Moynihan[1]*, Georga P. E. Cooke[1], Jenny A. Doust[1], Lisa Bero[2], Suzanne Hill[3], Paul P. Glasziou[1]

1 Bond University, Robina, Australia, **2** University of California, San Francisco, San Francisco, California, United States of America, **3** Australian National University, Acton, Australia

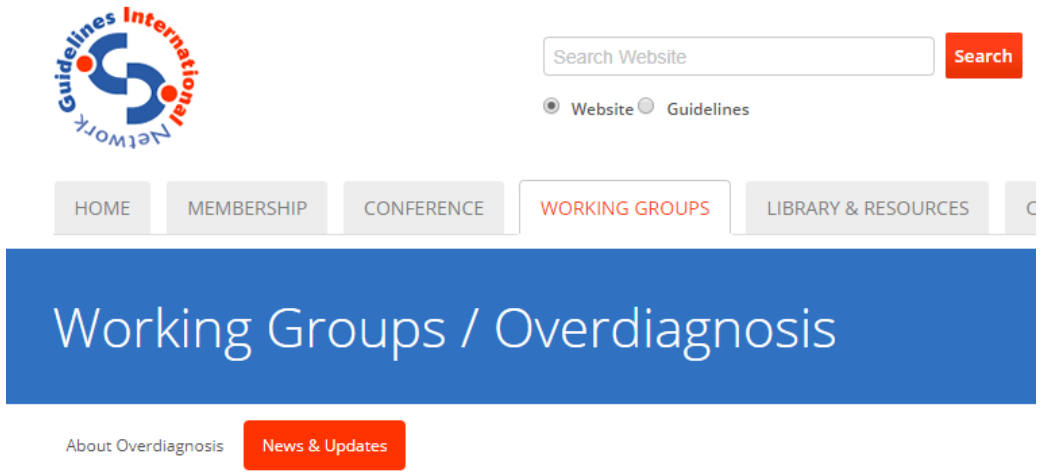
- Of 16 publications on 14 common conditions, **10 widened** and 1 narrowed definitions.
- Widen by 3 methods: (i) “pre-disease”; (ii) lowering thresholds; (iii) earlier or new diagnostic methods.
- **None** had rigorous assessment of **potential harms** of proposed changes.
- The average proportion of members with industry ties was 75%; 12/16 chairs had ties.

Guidance for modifying definitions of disease

JAMA Internal Medicine | Special Communication

Guidance for Modifying the Definition of Diseases
A Checklist

Jenny Doust, MBBS, PhD; Per O. Vandvik, PhD; Amir Qaseem, MD, PhD; Reem A. Mustafa, MD, PhD; Andrea R. Horvath, MD, PhD; Allen Frances, MD; Lubna Al-Ansary, MBBS, MSc; Patrick Bossuyt, PhD; Robyn L. Ward, MBBS, PhD; Ina Kopp, MD; Laragh Gollogly, MD, MPH; Holger Schunemann, MD, PhD; Paul Glasziou, MBBS, PhD; for the Guidelines International Network (G-I-N) Preventing Overdiagnosis Working Group



2026 Update in Progress (Meeting in Hermance, Switzerland, Oct 20-22)

FONDATION BROCHER

Table 2. Checklist of Items to Consider When Modifying a Disease Definition

Checklist Item	Rationa
1. Definition: What are the differences between the previous and the new definition?	It is imp
2. Number of people affected: How will the new disease definition change the incidence and prevalence of the disease?	The nur resourc
3. Trigger: What is the trigger for considering the modification of the disease definition?	Stating modifyi
4. Prognostic ability: How well does the new definition of disease predict clinically important outcomes compared with the previous definition?	The mo clinicall
5. Disease definition precision and accuracy: What is the repeatability, reproducibility, and accuracy (when estimations are possible) of the new disease definition?	Disease clinical of a refe
6. Benefit: What is the incremental benefit for patients classified by the new definition vs the previous definition?	Benefits particul be used
7. Harm: What is the incremental harm for patients classified by the new definition vs the previous definition?	Harms r to quan level, in
8. Net benefit and harms: What is the net benefit and harm for patients classified by the new definition vs the previous definition?	A panel prior to

Updating the disease definition guidance

Table 2. Checklist of Items to Consider When Modifying a Disease Definition

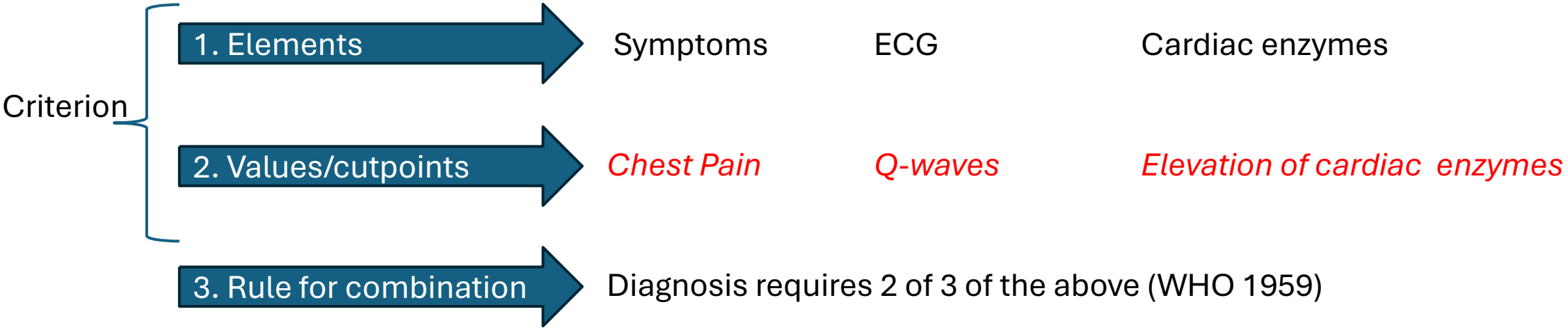
Checklist Item	Rationa
1. Definition: What are the differences between the previous and the new definition?	
2. Number of people affected: How will the new disease definition change the incidence and prevalence of the disease?	

Item 1 (Proposed 2026 update): *What are the differences between any previous definition and the proposed definition* ***in: the elements, the cutoffs, and the rules for combining these?***

Structure of a disease definition

Example: myocardial infarction

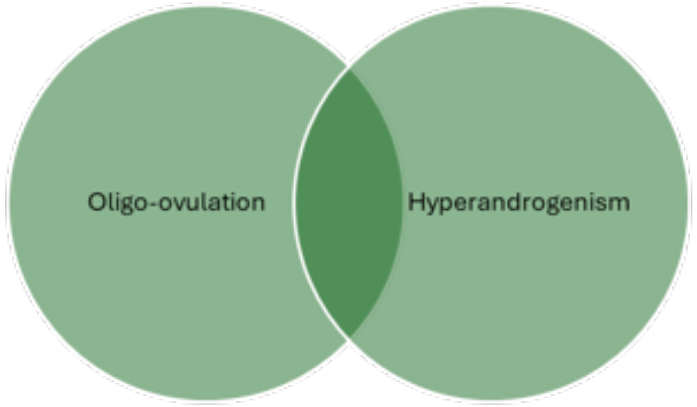
- **Concept** "myocardial cell death due to prolonged ischaemia"
- **Criteria** for myocardial infarction WHO 1959 "*Diagnosis requires 2 of 3 of: chest pain, Q waves on ECG; elevations of serum enzymes (eg AST, LDH)*".



How does this structure assist with analysis of changes to definitions?

1. Elements
2. Values/cutpoints
3. Combination rules

Combining Criteria: Boolean logic
Example of Polycystic Ovary Syndrome

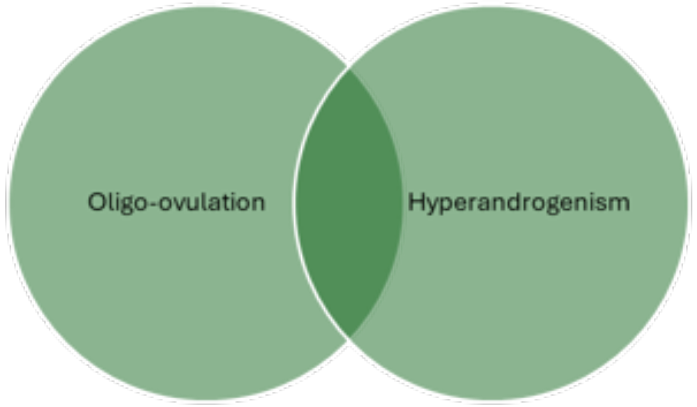


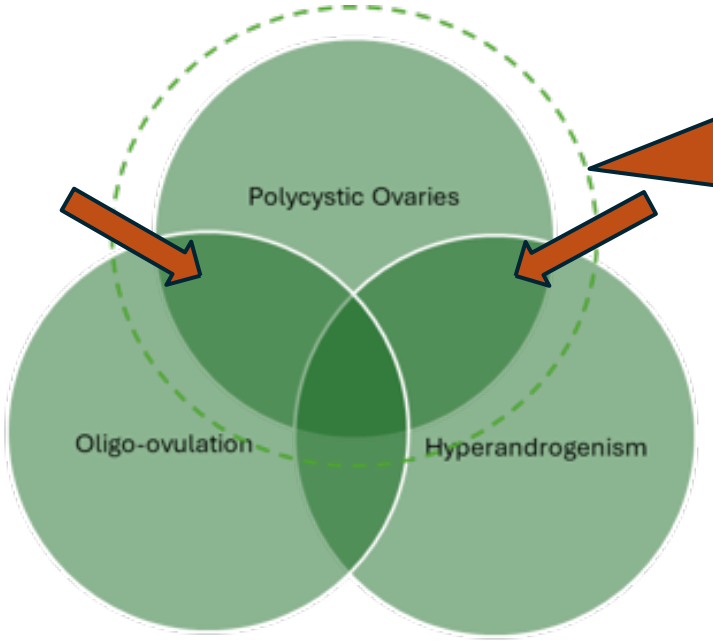
NIH criteria: required 2 of 2 criteria (AND)

O AND H (Venn overlap)

Combining Criteria: Boolean logic
Example of Polycystic Ovary Syndrome

1. Elements
2. Values/cutpoints
3. Combination rules





Adding an "OR" element always increases numbers diagnosed … but we don't know how much

NIH criteria: required 2 of 2 criteria (AND)

O AND H (Venn overlap)

Rotterdam criteria: required 2 of 3 criteria

(O AND H) OR (O AND P) OR (H AND P) (3 Venn overlaps)

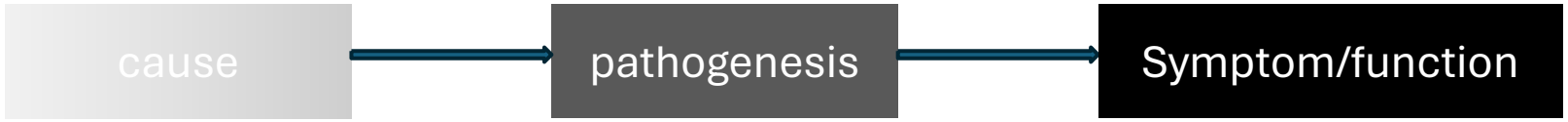
9% of women met the NIH criteria for PCOS, whereas approximately 18% (9% + 9%) of women met the Rotterdam criteria (based on imputed ultrasound findings) (March et al., 2009)

1. Elements
2. Values/cutpoints
3. Combination rules

What can be definition “elements”

1. Symptom or functioning based definitions
   - Experiential or directly observable phenomena, eg angina, migraine, asthma, …
2. “Pathogenetic”
   - instrumentally detectable phenomena, eg biochemical (thyroid), imaging (consolidation of lung), instrument (lung function), …
3. Etiological or causal,
   - eg PCR of virus

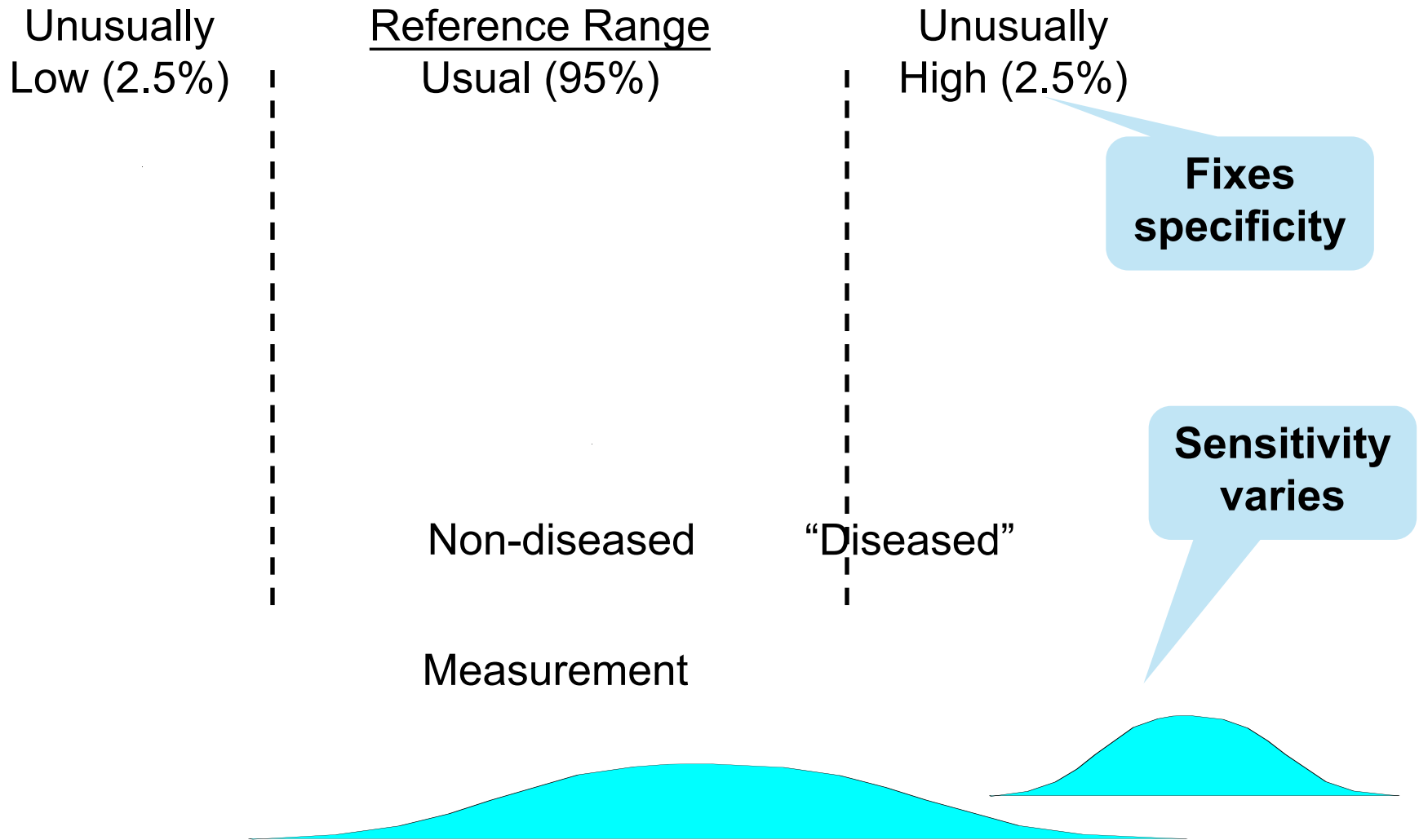
Most definitions will have a mix of these, eg myocardial infarction.



Wulff H. Philosophy of Medicine, 1976

1. Elements
2. Values/cutpoints
3. Combination rules

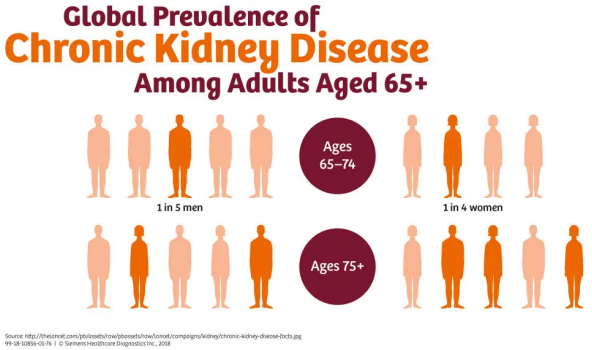
Reference range: a common cut-point



Cutpoints that are NOT 95% reference ranges

- Blood pressure
- Cholesterol
- Osteoporosis – T-score
- Blood glucose for gestational diabetes
- eGFR for CKD
- BMI and obesity

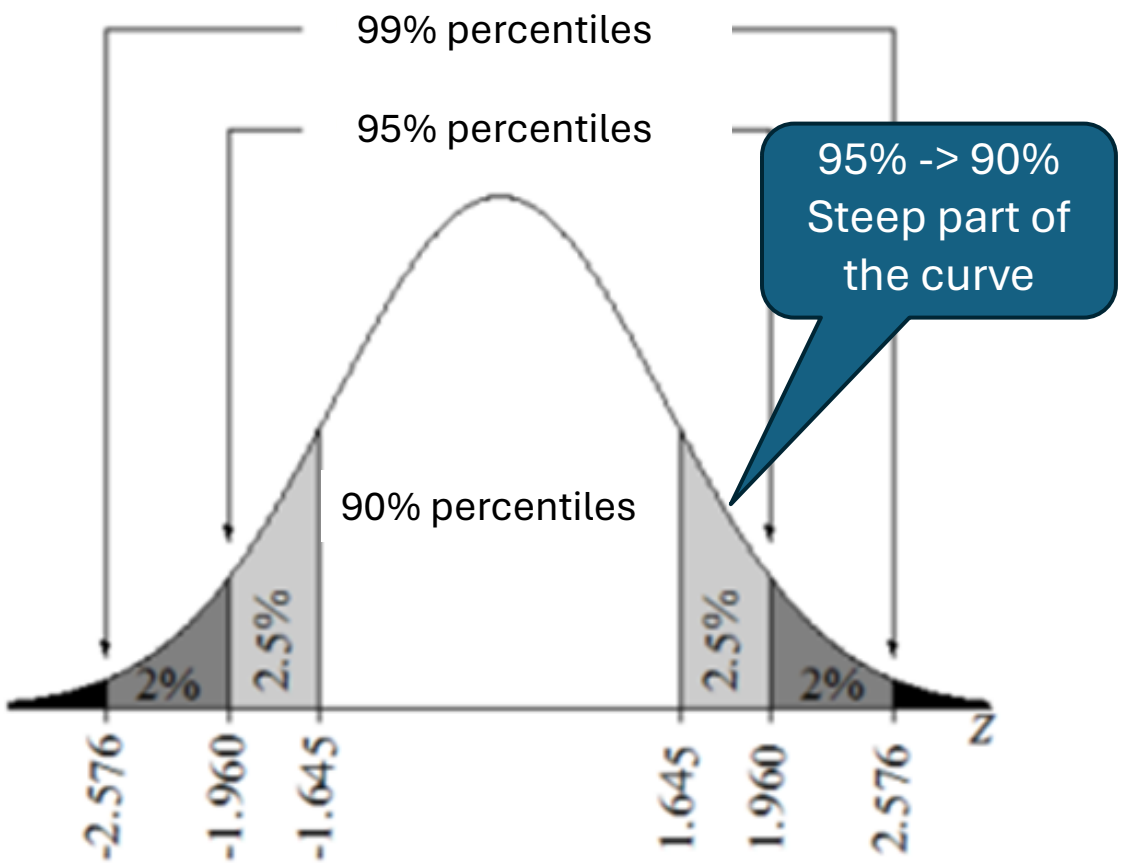




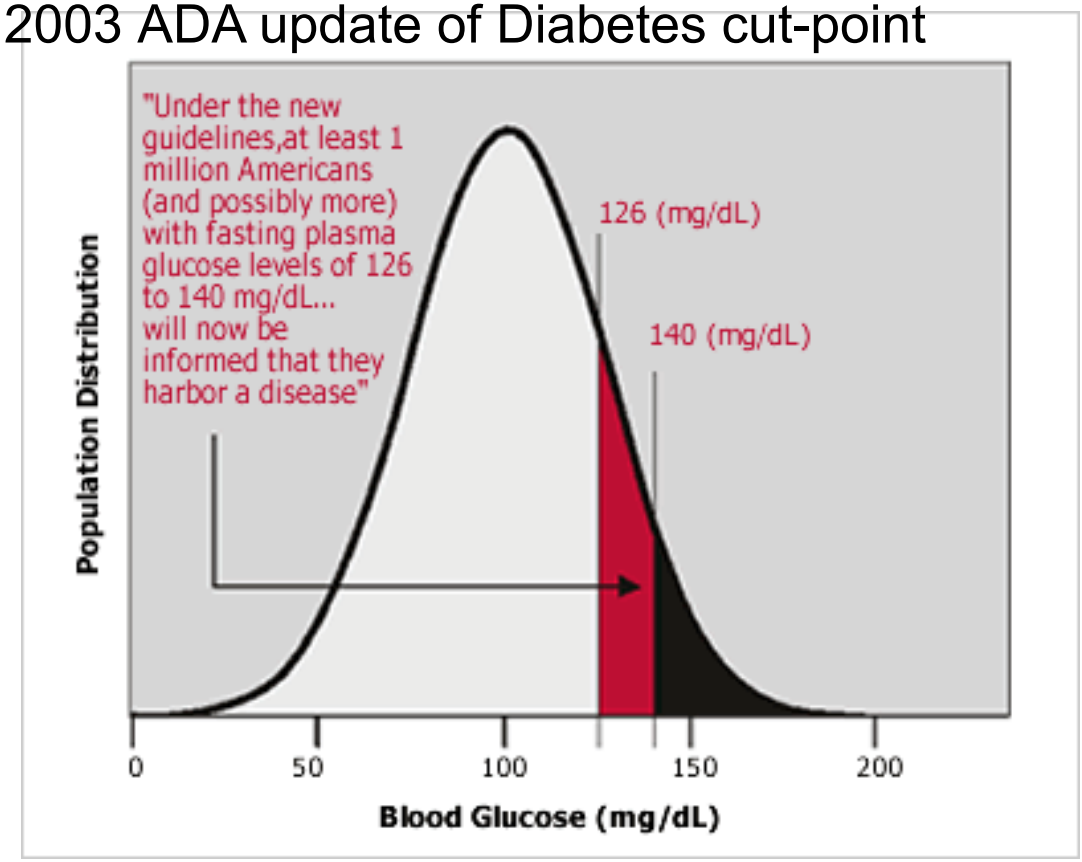


1. Elements
2. Values/cutpoints
3. Combination rules

Shifting cut-points: what part of the curve?

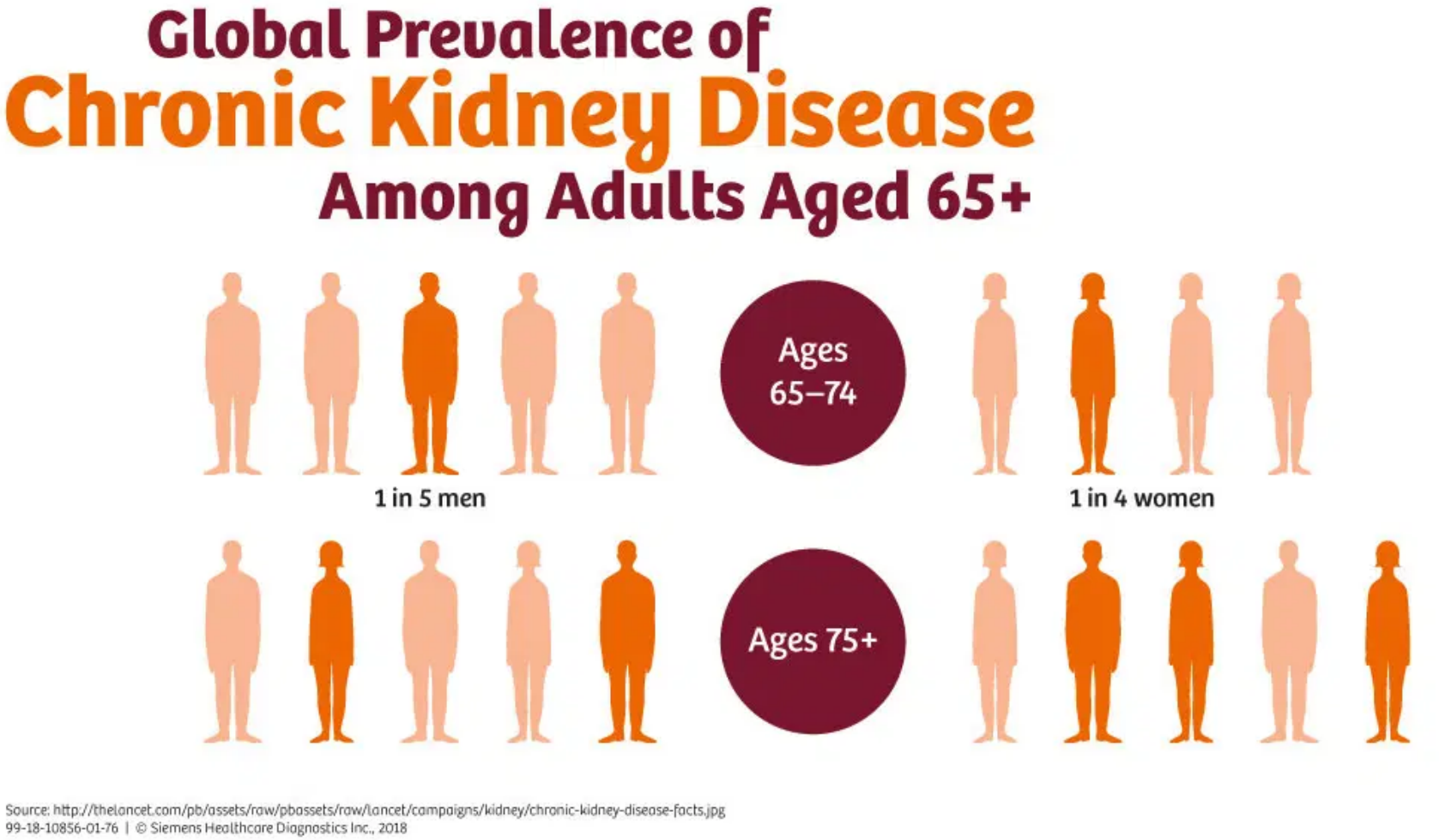


Example of “small” change with large impact:
2003 ADA update of Diabetes cut-point

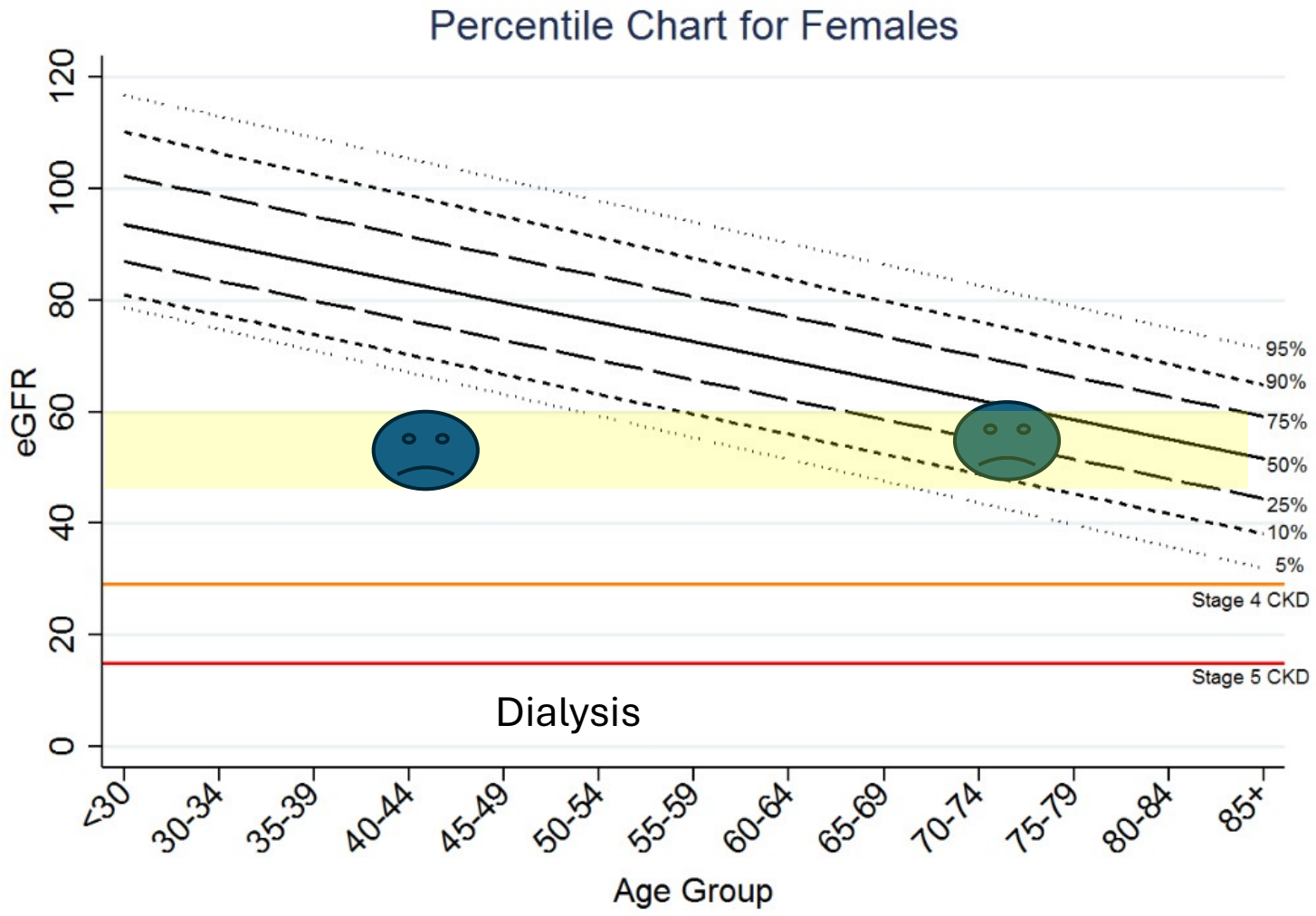




70 year old women with an eGFR of 58; otherwise well
She is told she has *Chronic Kidney Disease*



Chronic kidney "disease" versus age





Guppy M, Glasziou P, et al BMJ EBM, 2022

(Reducing) error and inaccuracy in definitions

Table 2. Checklist of Items to Consider When Modifying a Disease Definition
4. Prognostic ability: How well does the new definition of disease predict clinically important outcomes compared with the previous definition?
5. Disease definition precision and accuracy: What is the repeatability, reproducibility, and accuracy (when estimations are possible) of the new disease definition?

Measurement of an element:
Average of several reduces error



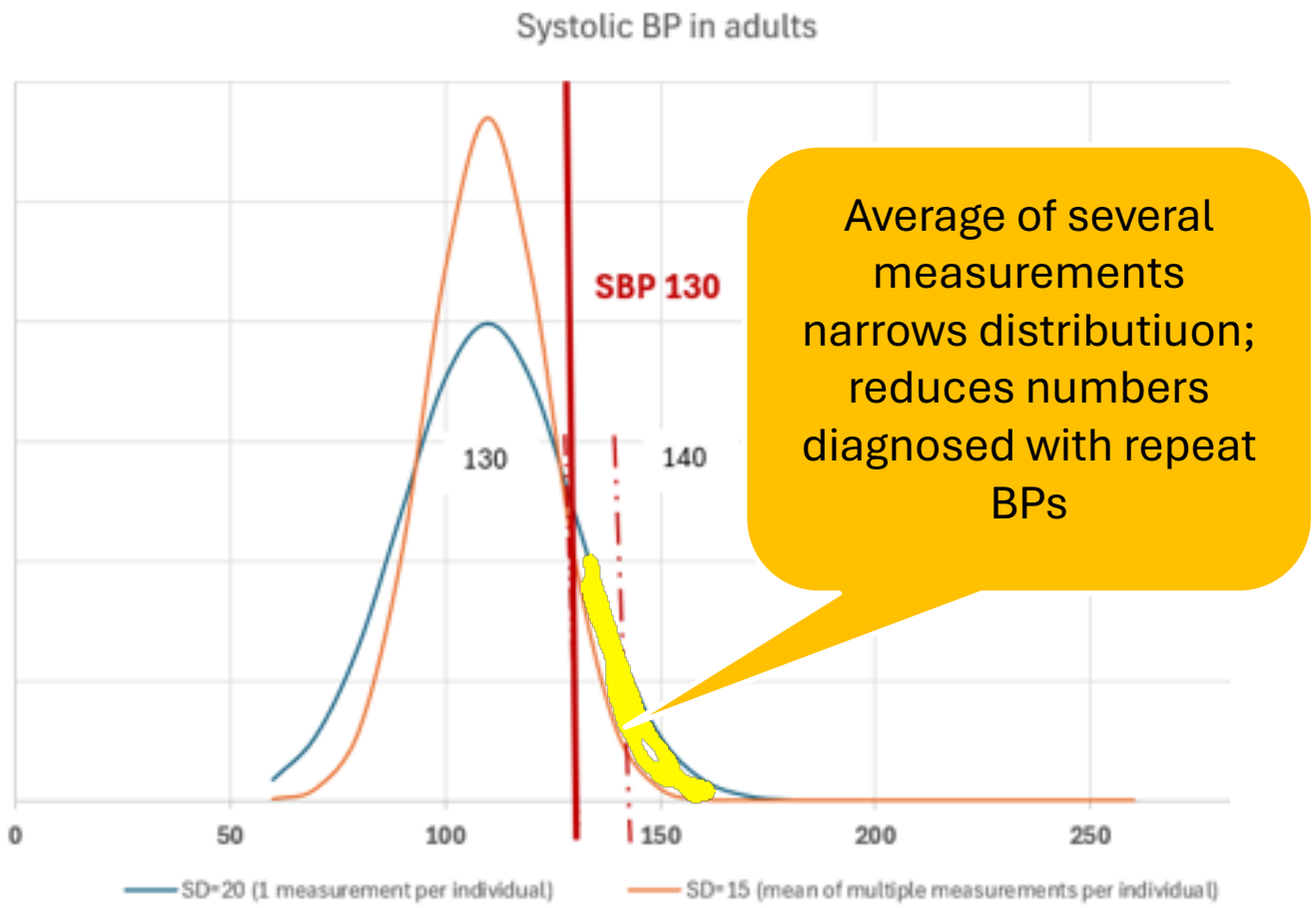
Office Blood Pressure Measurement

1. The patient should avoid caffeine, exercise, and smoking for at least 30 minutes before measurement. Ensure the patient has emptied their bladder.
2. Use a blood pressure device that has been validated for accuracy (validatebp.org).
3. Use the correct cuff size on a bare arm.
4. The patient's arm should be supported at heart level.
5. Have the patient relax, sitting in a chair (feet on floor, legs uncrossed, and back supported) for more than 5 minutes of rest.
6. Neither the patient nor the clinician should talk during the rest period or during the measurement. The patient should not be using their phone.
7. Blood pressure measurement should be taken in a temperature-controlled room.
8. Take 2 or more blood pressure measurements at least 1 minute apart. Average the readings, and provide the patient their blood pressure readings both verbally and in writing.

How To

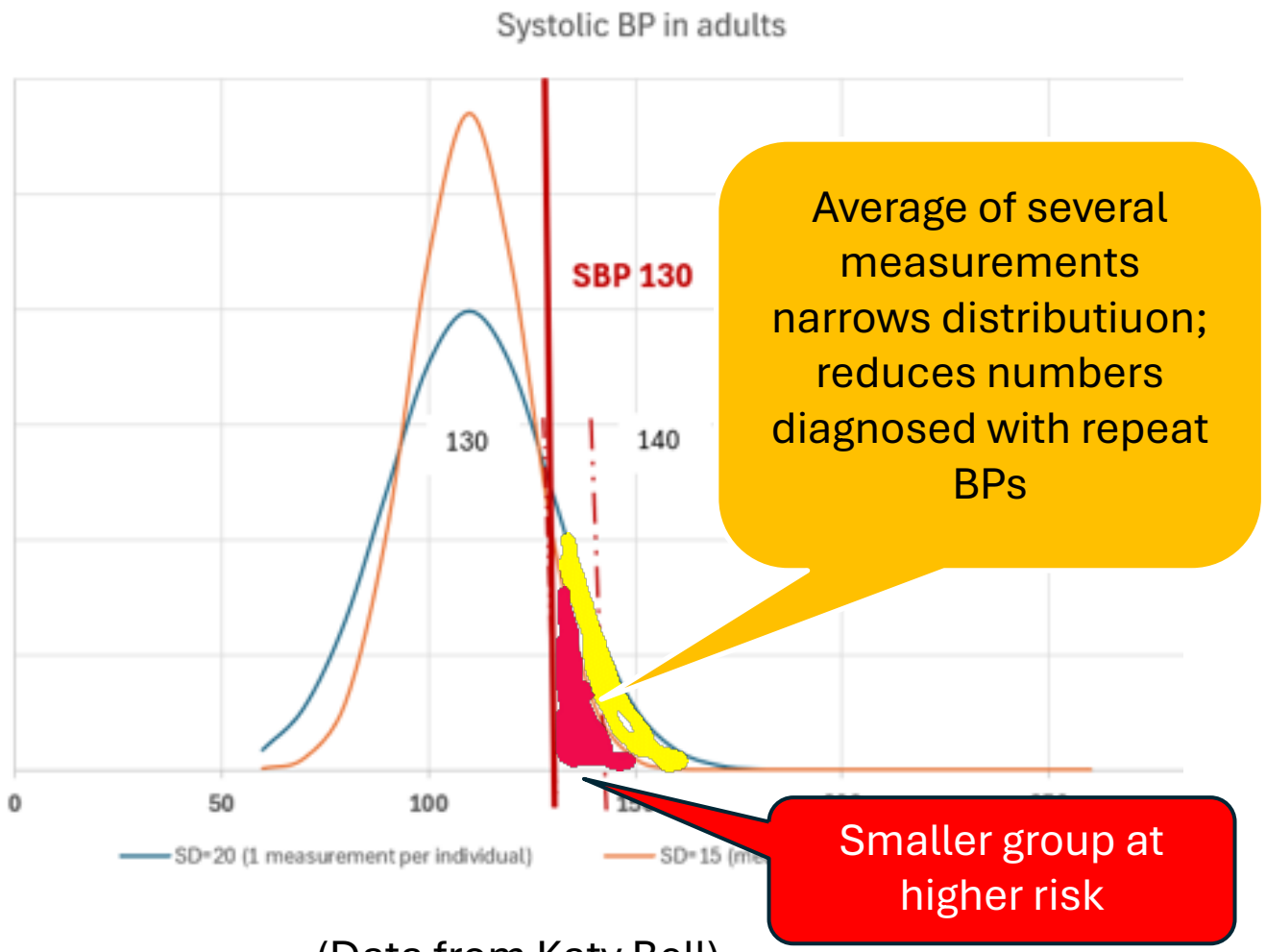
How many

Measurement of an element: error and repeat measurements



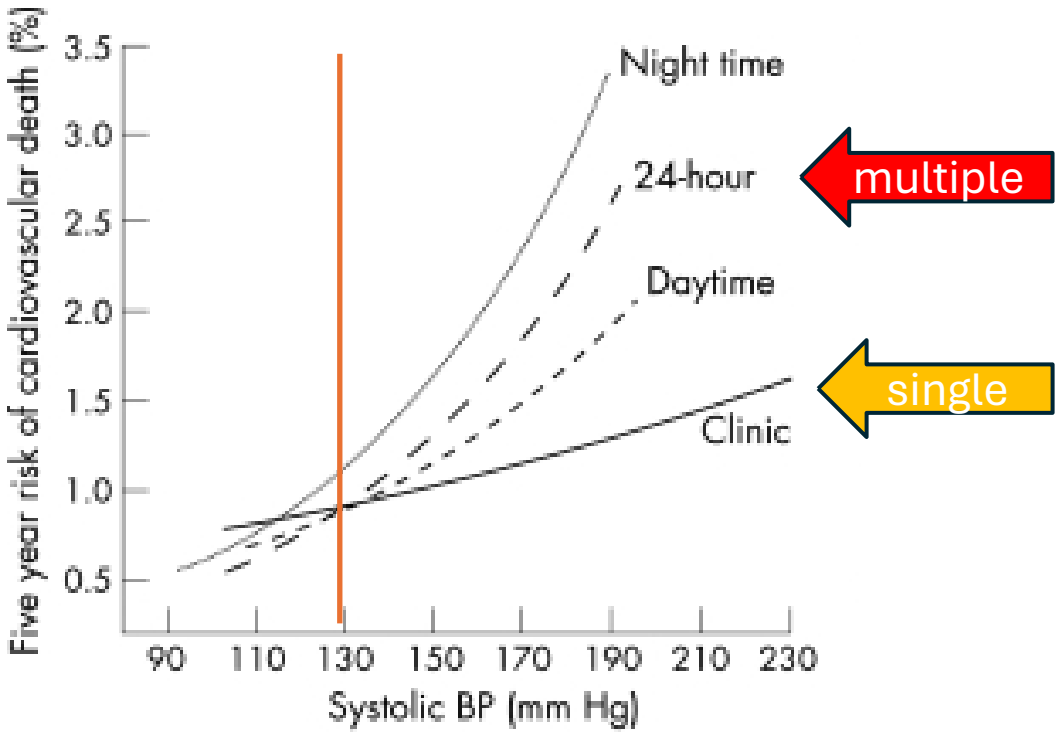
(Data from Katy Bell)

Measurement of an element: error and repeat measurements



(Data from Katy Bell)

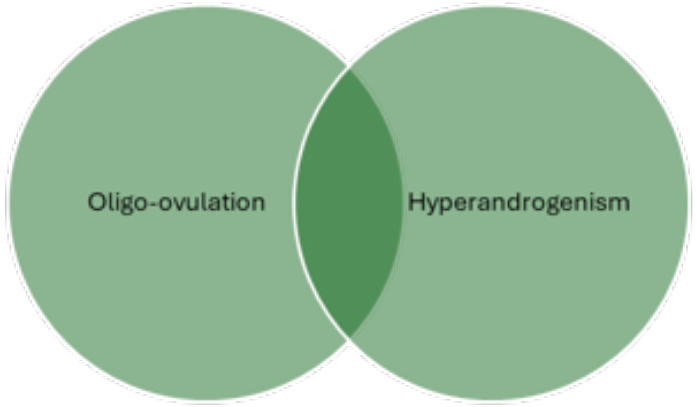
Average of several measurements improves prognostic strength

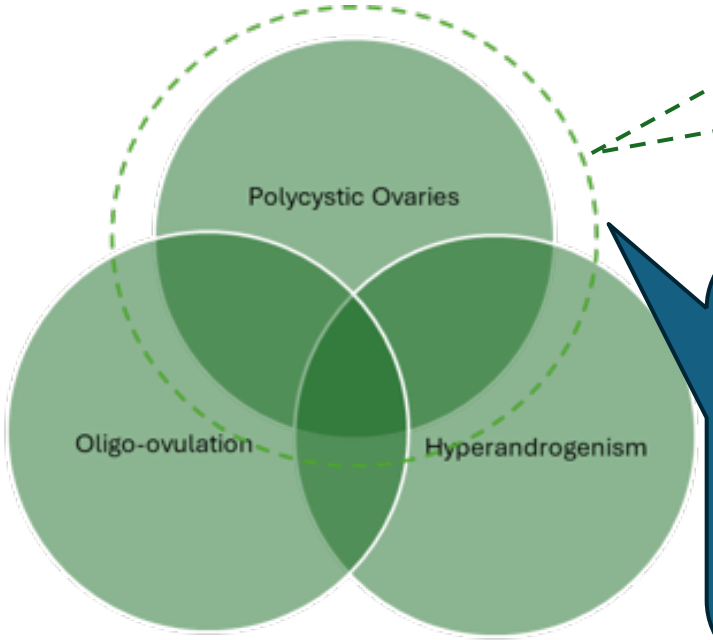


Madin K, Iqbal P. Twenty four hour ambulatory blood pressure monitoring: a new tool for determining cardiovascular prognosis. Postgrad Med J. 2006

Changing cutpoint: DIRECT and INDIRECT
Example of Polycystic Ovary Syndrome

1. Elements
2. Values/cutpoints
3. Combination rules





Expansion, eg
Fewer cysts OR
"better" ultrasound

Increase diagnosis via
(a) Change in cutpoint (DIRECT)
(b) Change in measurement sensitivity (INDIRECT)

NIH criteria: required 2 of 2 criteria (AND)

O AND H (Venn overlap)

Rotterdam criteria: required 2 of 3 criteria

(O AND H) OR (O AND P) OR (H AND P) (3 Venn overlaps)

9% of women met the NIH criteria for PCOS, whereas approximately 18% (9% + 9%) of women met the Rotterdam criteria (based on imputed ultrasound findings) (March et al., 2009)

(Incremental) benefits and harms

Table 2. Checklist of Items to Consider When Modifying a Disease Definition
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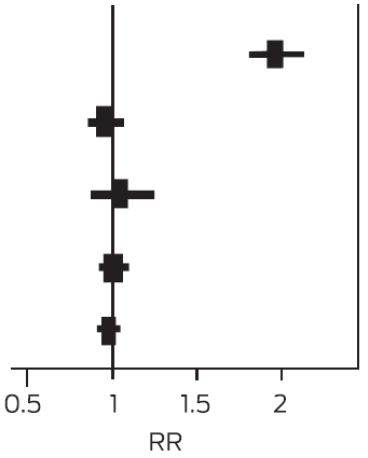
Gestational Diabetes: change from 2-step to 1-step diagnosis

	1998 ADIPS 2-step	2014 IADPSG 1-step
50G challenge	> 7.8 mmol	-
	AND	
2 Hour OGTT	ONE of 2 **(OR)**	ONE of 3 **(OR)**
Fasting	> 5.5 mmol	> 5.1 mmol
1 hour	-	> 10 mmol
2 hour	> 8.0 mmol	> 8.5 mmol

Hillier et al RCT of 1-step vs 2-step GDM screening, NJEM 2021

2 Risk of outcomes of one-step (International Association of the Diabetes and Pregnancy Study Groups [IADPSG]) compared with two-step (Carpenter–Coustan) screening for gestational diabetes mellitus (GDM) in the randomised controlled trial conducted in the United States[1]

Outcome	1-step	2-step	Relative risk (95% CI)*
Proportion diagnosed with GDM	16.5%	8.5%	1.95 (1.81–2.10)



* Relative risk > 1 indicates increase with IADPSG. † Birth weight > 90th percentile. ‡ Stillbirth, neonatal death, shoulder dystocia, bone fracture, or any arm or hand nerve palsy related to birth injury. ◆

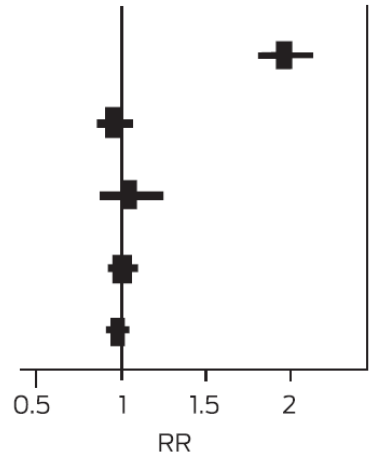
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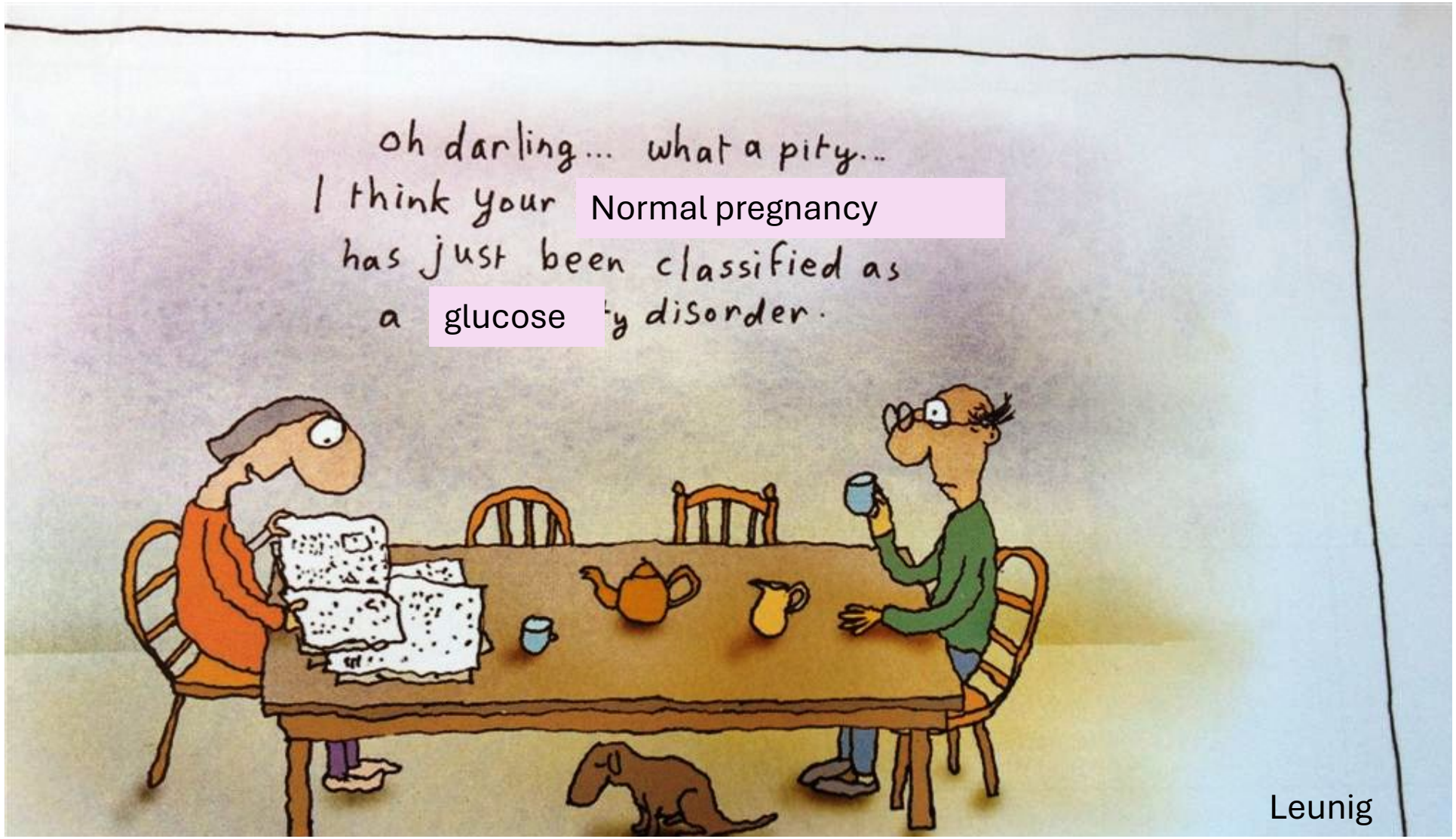
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Outcome	1-step	2-step	Relative risk (95% CI)*
Proportion diagnosed with GDM	16.5%	8.5%	1.95 (1.81–2.10)
Large for gestational age infants†	8.9%	9.5%	0.95 (0.87–1.05)
Perinatal composite outcome‡	3.1%	3.0%	1.04 (0.88–1.23)
Gestational hypertension/preeclampsia	13.6%	13.5%	1.0 (0.93–1.08)
Primary caesarean delivery	24.0%	24.6%	0.98 (0.93–1.02)



* Relative risk > 1 indicates increase with IADPSG. † Birth weight > 90th percentile. ‡ Stillbirth, neonatal death, shoulder dystocia, bone fracture, or any arm or hand nerve palsy related to birth injury. ◆

Changing GDM definition



Item 9? Consider the label used

BJGP Open

RESEARCH

Chronic kidney disease and the alternative labels used by GPs in Australia: a qualitative interview study

Michelle Guppy[1]*, Esther Joy Bowles[2], Paul Glasziou[3], Jenny Doust[4]



GPs had concerns about the words 'chronic' and 'disease', and used different terminology to explain these words to patients when diagnosing them with CKD

Some example alternative labels:

- Kidney is not functioning well, renal impairment
- Kidneys are not working as well as they should
- Kidneys aren't working at 100%



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PLOS | MEDICINE

Expanding Disease Definitions in Guidelines and Expert Panel Ties to Industry: A Cross-sectional Study of Common Conditions in the United States

Raymond N. Moynihan[1]*, Georga P. E. Cooke[1], Jenny A. Doust[1], Lisa Bero[2], Suzanne Hill[3], Paul P. Glasziou[1]

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- Of 16 publications on 14 common conditions, **10 widened** and 1 narrowed definitions.
- Widen by 3 methods: (i) “pre-disease”; (ii) lowering thresholds; (iii) earlier or new diagnostic methods.
- **None** had rigorous assessment of **potential**

CONCLUSION:
“research and policy attention might be directed at designing new processes for reviewing disease definitions, free of financial conflicts of interest and informed by rigorous analysis of benefits and harms.” (Item 10?)

Some Conclusions

1. Disease Definitions change frequently, often expand the population diagnosed, but often poorly justified
2. When a new definition is proposed, ask is it justified? (Apply the 8-item checklist)
3. When GRADing, ask how the P (of PICO) matches the evidence?
   - If not, consider applicability to any additional patients

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