HOW CAN WE USE RESEARCH EVIDENCE TO IMPROVE LIFE AFTER STROKE?
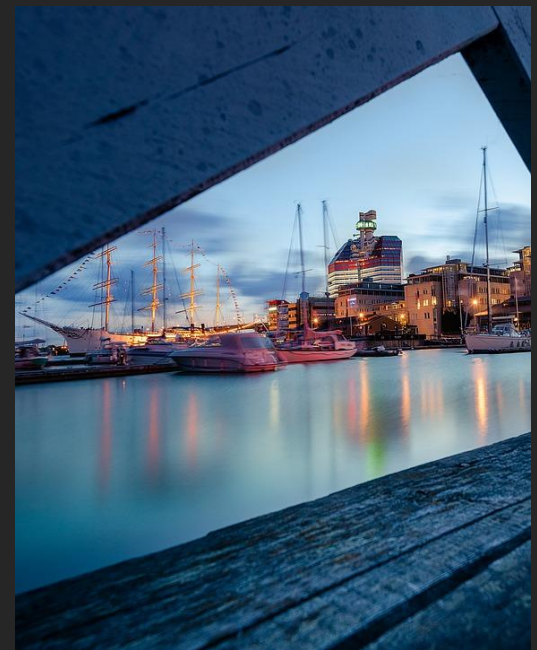
A CLINICAL PERSPECTIVE

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What will be covered

- How can we transfer research evidence into clinical practice to improve stroke rehabilitation?

- How can we involve people with stroke and their carers more in their rehabilitation and recovery?

"I do not have any conflicts of interest related to the work presented".

NATIONAL CLINICAL GUIDELINE FOR STROKE

for the United Kingdom and Ireland

2023 edition

www.strokeguideline.org

Nationella riktlinjer för vård vid stroke

Stöd för styrning och ledning

2020

Foto: Johnér Bildbyrå AB

538 recommendations

119 recommendations

An example from Sahlgrenska University Hospital, Gothenburg, Sweden

- National Swedish stroke guidelines did not specify **which assessments should be used**, by **which professional and at what timepoint**

- Joint clinical practice guideline for physiotherapists and occupational therapist

- To facilitate and support clinical reasoning and decision making

- To ensure evidence-based, effective, equal person-centred rehabilitation

We had two main challenges

Agree on which outcome measures we use in our assessments

Using the results of our assessments in a meaningful way

BMC Neurology

RESEARCH ARTICLE **Open Access**

An overview of systematic reviews on upper extremity outcome measures after stroke

Margit Alt Murphy[1*], Carol Resteghini[2], Peter Feys[3] and Ilse Lamers[3]

International Journal of Stroke WSO

Consensus

Standardized measurement of sensorimotor recovery in stroke trials: Consensus-based core recommendations from the Stroke Recovery and Rehabilitation Roundtable

SAGE

Gert Kwakkel[1], Natasha A Lannin[2], Karen Borschmann[3], Coralie English[4], Myzoon Ali[5], Leonid Churilov[3], Gustavo Saposnik[6], Carolee Winstein[7], Erwin EH van Wegen[8], Steven L Wolf[9], John W Krakauer[10] and Julie Bernhardt[3]

frontiers in Neurology

Consensus-Based Core Set of Outcome Measures for Clinical Motor Rehabilitation After Stroke—A Delphi Study

Johannes Pohl[1,2*], Jeremia Philipp Oskar Held[1], Geert Verheyden[2], Margit Alt Murphy[3], Stefan Engelter[4,5], Agnes Flöel[6,7], Thierry Keller[8], Gert Kwakkel[9,10], Tobias Nef[11,12], Nick Ward[13,14], Andreas Rüdiger Luft[1,15] and Janne Marieke Veerbeek[1*]

International consensus recommendations for outcome measurement in post-stroke arm rehabilitation trials

Julie DUNCAN MILLAR[1*], Frederike VAN WIJCK[2], Alex POLLOCK[1], Myzoon ALI[1]

European evidence-based recommendations for clinical assessment of upper limb in neurorehabilitation (CAULIN): data synthesis from systematic reviews, clinical practice guidelines and expert consensus

PRANGE-LASONDER GB[*1,2], ALT MURPHY M[3], LAMERS I[4,5], HUGHES AM[6], BUURKE JH[1,7], FEYS P[4], KELLER T[8], KLAMROTH-MARGANSKA V[9], TARKKA IM[10], TIMMERMANS A[4], BURRIDGE JH[6]

The European Network on Robotics for Neurorehabilitation - COST Action

# Different objectives for using agreed outcome measures

Research

- Understand motor recovery
- Improve prediction
- Evaluate treatment effects
- Agreed outcome selection in future studies
- Allowing data merging and large multi-centre studies
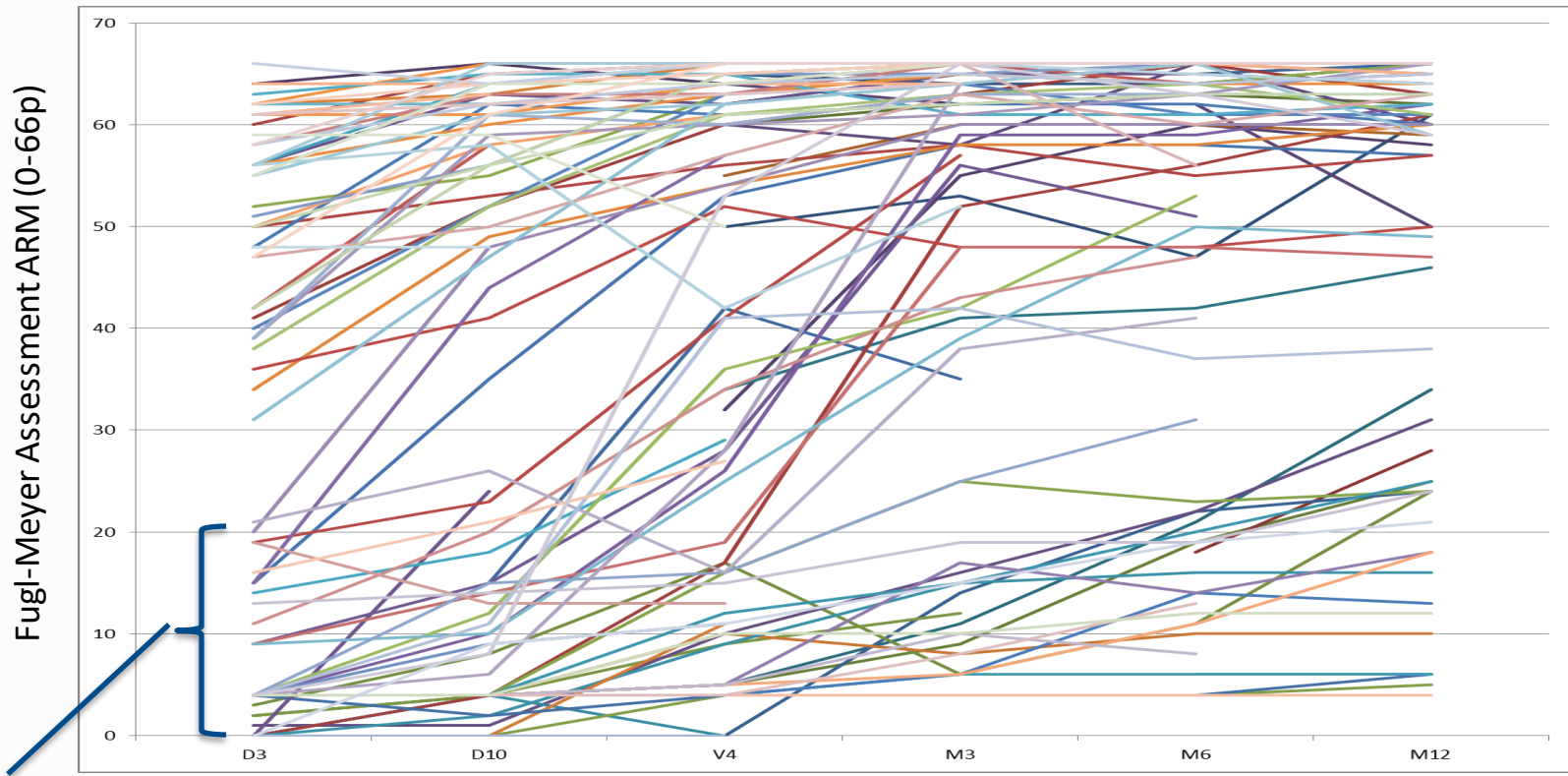
Clinical practice

- Understand consequences of stroke and recovery
- Guide prognosis and treatment planning
- Evaluate treatment effects
- Involve and inform patients in their carers

Fugl-Meyer Assessment ARM (0-66p)
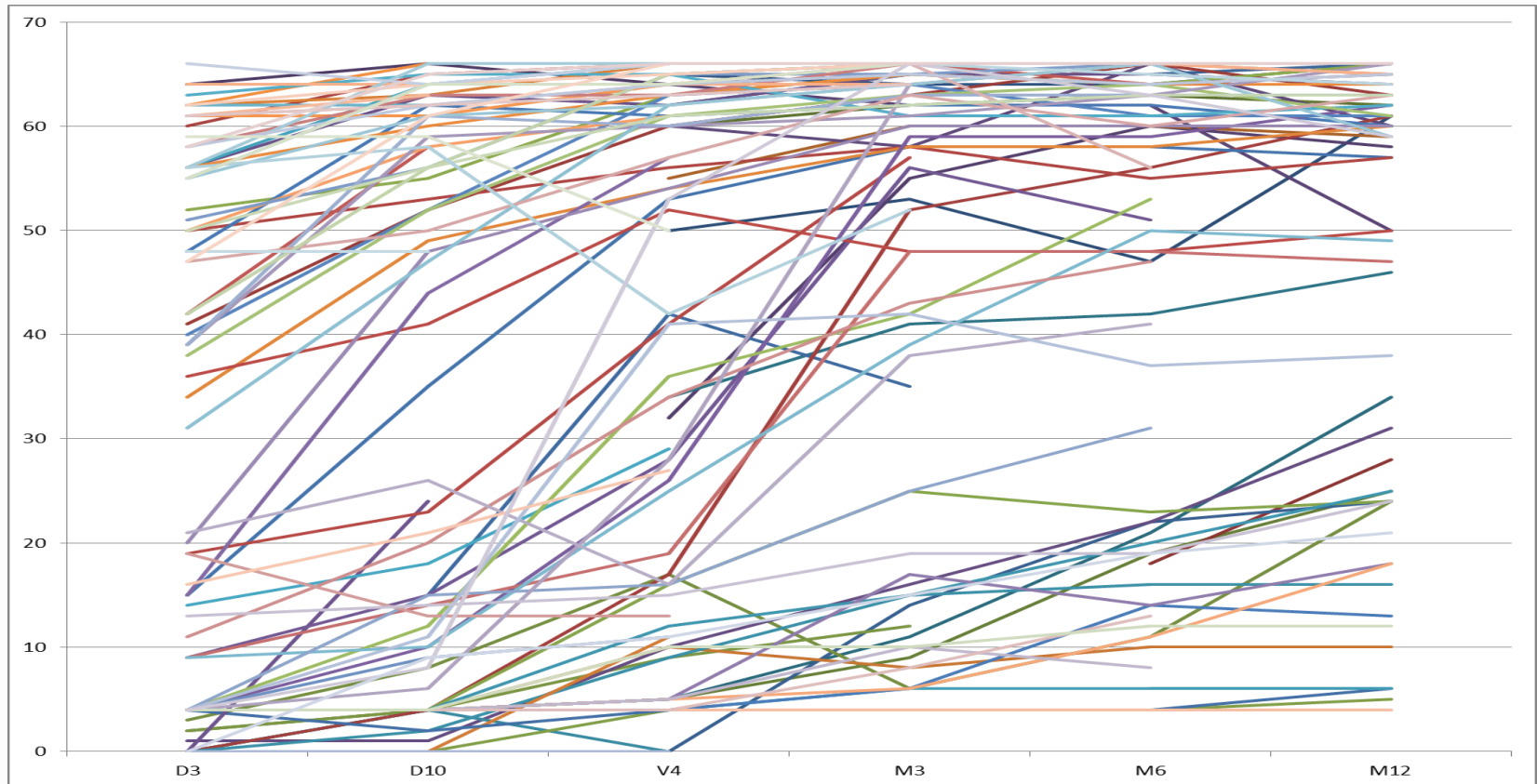
SALGOT - Stroke Arm Longitudinal Study at the University of Gothenburg

Alt Murphy et al. 2011, Persson et al. 2016

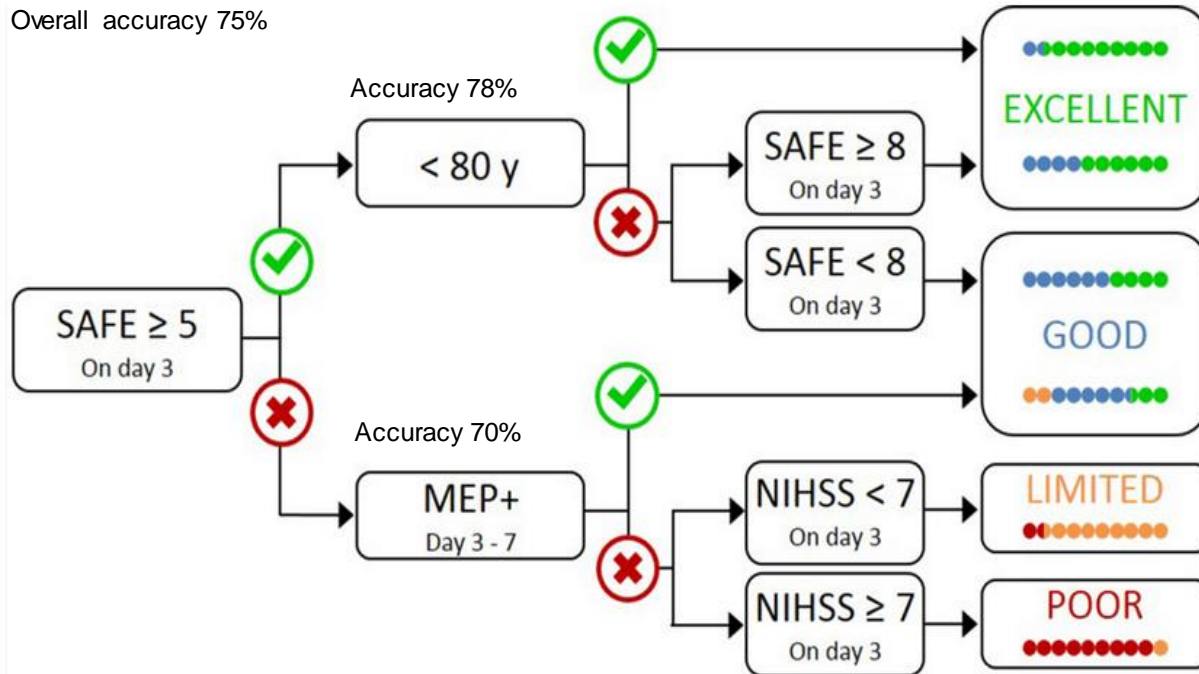Alt Murphy et al. 2011, Persson et al. 2016

Prediction of upper limb functioning
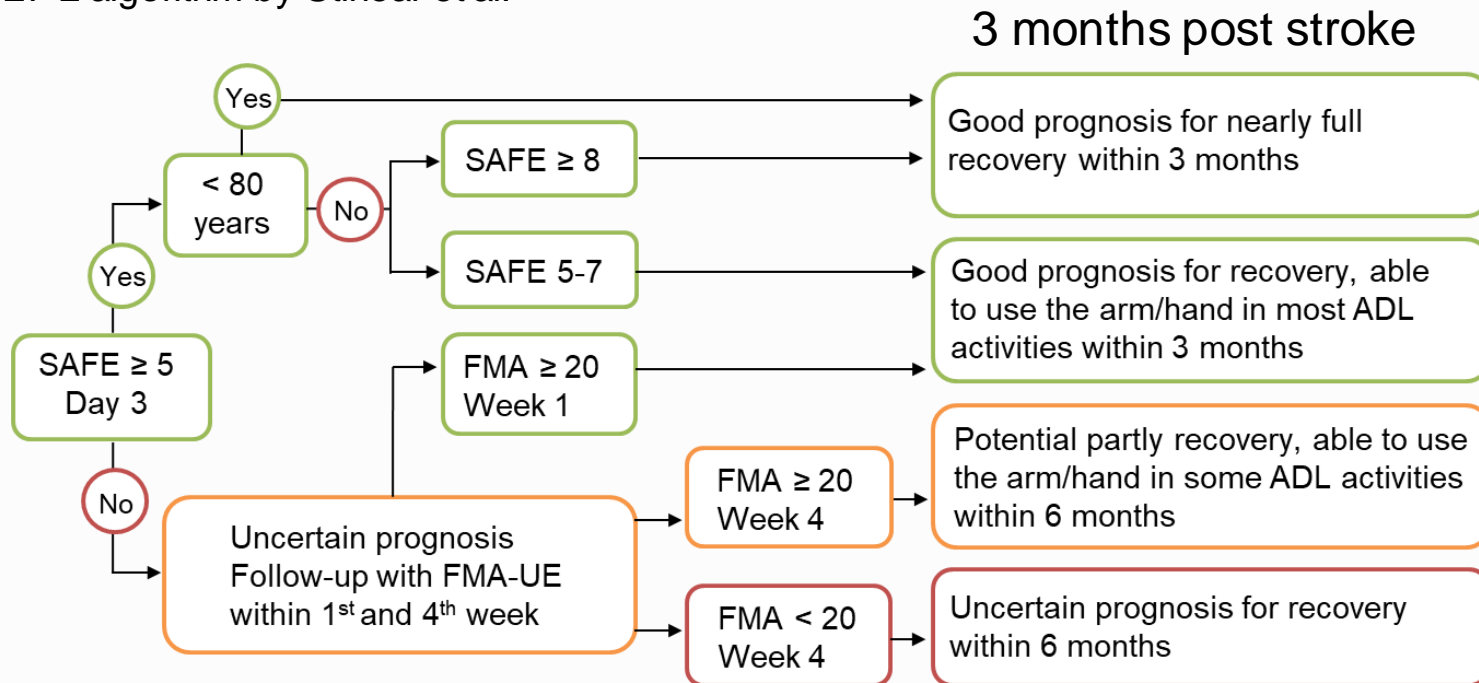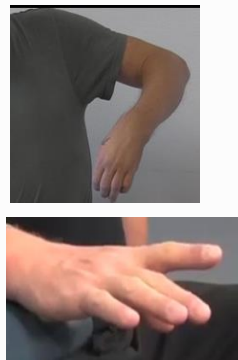## PREP 2 Algorithm

3 months post stroke

(Stinear et al Brain 2007; Boyd et al 2017 J Stroke; Stinear et al. 2017 Ann Clin Transl Neurol & Stroke)

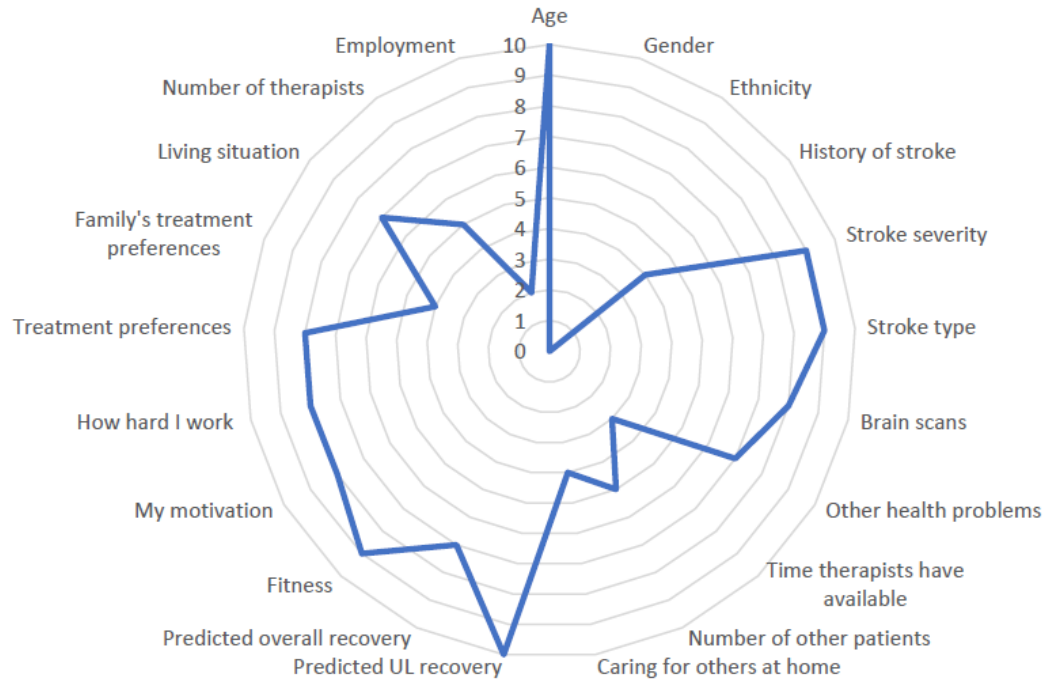# Prediction algorithm for upper extremity impairment

Adapted from PREP 2 algorithm by Stinear et al.

3 months post stroke

Yes → Good prognosis for nearly full recovery within 3 months

< 80 years — No → SAFE ≥ 8 → Good prognosis for nearly full recovery within 3 months

SAFE 5-7 → Good prognosis for recovery, able to use the arm/hand in most ADL activities within 3 months

Yes

SAFE ≥ 5 Day 3

FMA ≥ 20 Week 1 → Good prognosis for recovery, able to use the arm/hand in most ADL activities within 3 months

No

Uncertain prognosis Follow-up with FMA-UE within 1st and 4th week

FMA ≥ 20 Week 4 → Potential partly recovery, able to use the arm/hand in some ADL activities within 6 months

FMA < 20 Week 4 → Uncertain prognosis for recovery within 6 months

Alt Murphy et al. Implementation of evidence-based assessment of upper extremity in stroke rehabilitation. 2021, JRM

Factors participants think their therapists consider to plan upper limb therapy.

Themes from patient interviews

- Benefits of prediction use
- Concerns of prediction use
- Therapy should be personalised
- Satisfaction with therapy
- Predictions don't determine outcomes, I do

PhD Theses by
Phoebe Ross,
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for the United Kingdom and Ireland

People with stroke and their carers should be involved in a collaborative process with healthcare professionals to agree rehabilitation options, guided by the person's own needs, goals and preferences.

Predictive tools that give useful information at a population level can be used to inform such discussions.

Clinicians should facilitate shared decision making and communicate the likelihood of the individual achieving their goals in an informed, compassionate, and individualised manner.

More research is needed to identify which people with stroke will gain the most from different approaches and intensities of rehabilitation, and how to reliably identify those people who will not benefit from such interventions.

Thank you!