

EORTC's strategy on the development and implementation of PRO and HRQoL measures for cancer clinical research

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We need ‘fit for purpose’ instruments

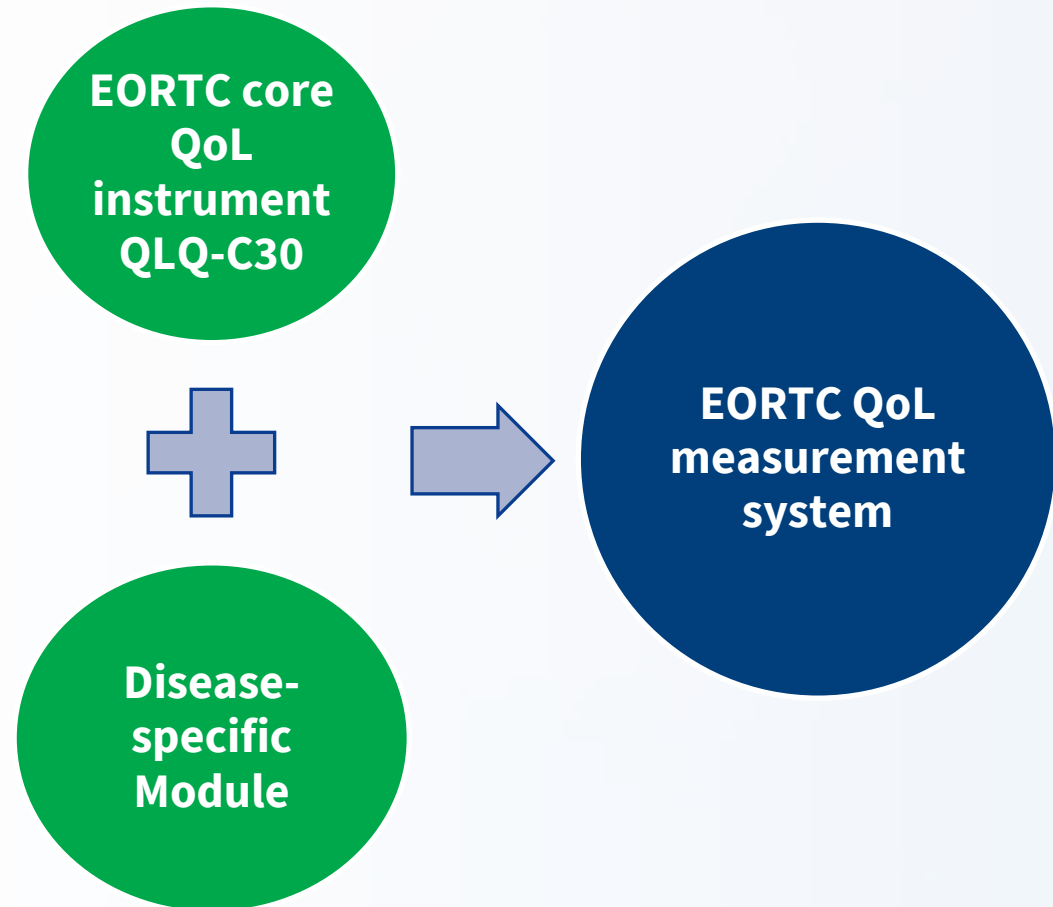
– what does it mean?

– how do we achieve it?

- The traditional EORTC modular approach (until 2016)
- The new EORTC approach (from 2016)

The traditional EORTC measurement approach

- The development of **scientifically robust PRO questionnaires**
- **Core + Module** approach
- Focus on rigorous development, following a common approach, across a **range of languages/countries**



Sprangers MAG, Cull A, Bjordal K, Groenvold M, Aaronson NK. The European Organization for Research and Treatment of Cancer Approach Quality of Life Assessment: Guidelines for Developing Questionnaire Modules. Quality of Life Research 2: 287-295, 1993. Qual Life Res

The Core Questionnaire: EORTC QLQ-C30

- **Content**
 - 30 items covering 15 domains (symptoms and functioning) that are relevant for cancer patients
- **Use and availability**
 - Most widely used PROM in oncology (PubMed ‘hits’ N>5,725), in cancer clinical trials, and increasingly in clinical practice
 - >100 linguistically validated translations
- **Carefully validated and documented**
 - Extensive international validation, information on interpretation (MID), etc.
 - Reference values, general population samples
 - Cross-cultural validation
 - Prognostic significance
 - Utility measure (EORTC QLU-10D)

Aaronson NK et al. QLQ-C30: A Quality-of-Life Instrument for Use in International Clinical Trials in Oncology. J Natl Cancer Inst 1993.

Why was the traditional strategy not sufficient?

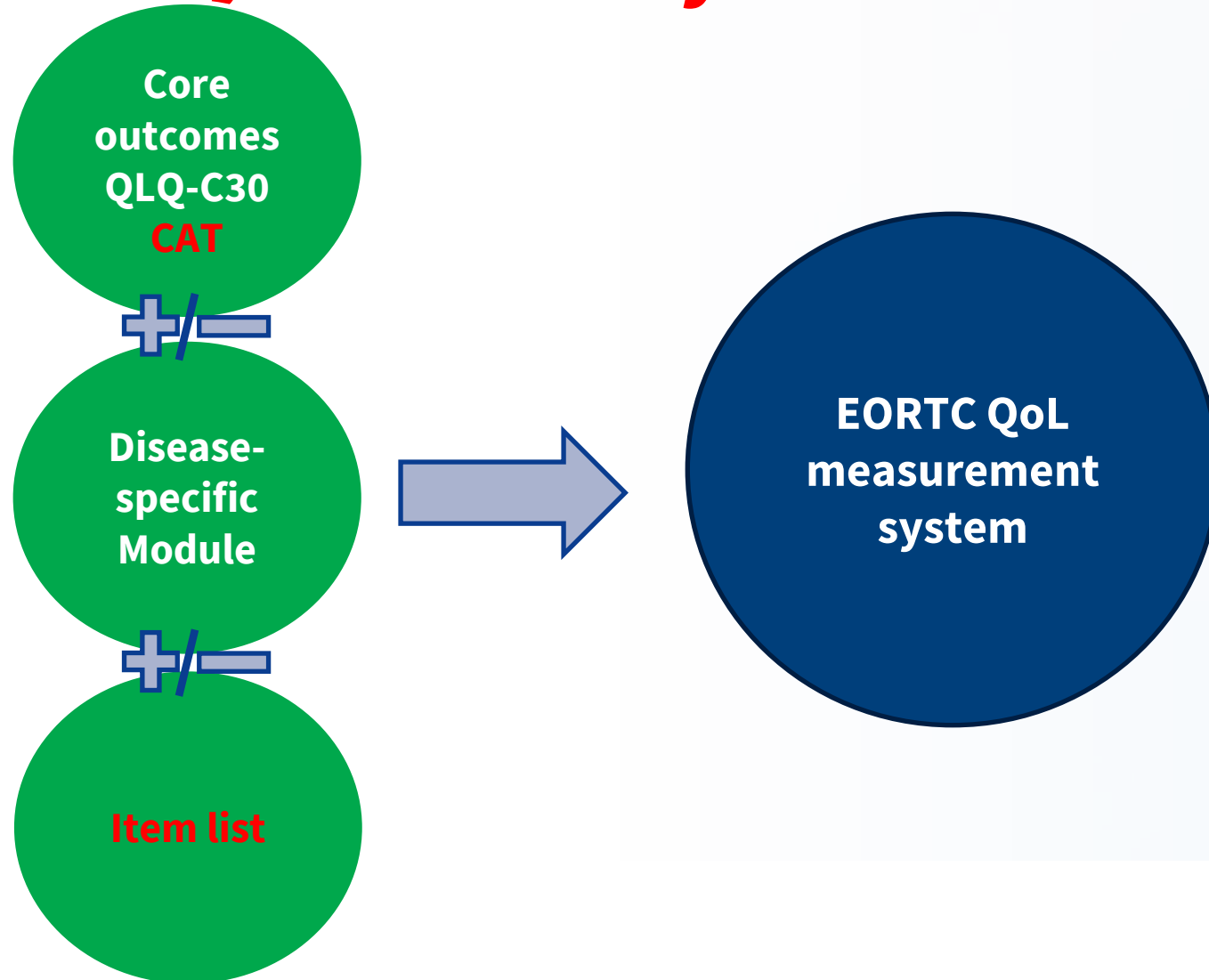
- Problem 1: content validity

- Despite all their advantages, **no ‘static questionnaire’ can ensure content validity** (i.e., covering the right domains) **in trials of new drugs with new adverse events**

- Problem 2: sum-scored scales are no longer optimal

- Traditional static questionnaire do not utilize the newest technology** for PRO, i.e., **computer-adaptive testing (CAT)**, which allows for individualised selection of questions based on previous responses

The new EORTC QLQ Strategy (from 2016) **adds flexibility in two ways**



New EORTC strategy aligned with FDA

‘... We favor a thoughtful combination of static questionnaires and item banks or libraries to create a balanced, flexible, and modular approach to PRO assessment to address targeted trial objectives and accommodate the needs of multiple stakeholders.’

Kluetz et al. *Clin Cancer Res* 2016; 22: 5618. doi: 10.1158/1078-0432.CCR-16-2140

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CCR Perspectives in Regulatory Science and Policy

Clinical
Cancer
Research

Focusing on Core Patient-Reported Outcomes in Cancer Clinical Trials: Symptomatic Adverse Events, Physical Function, and Disease-Related Symptoms

Paul G. Kluetz¹, Ashley Slagle², Elektra J. Papadopoulos², Laura Lee Johnson³, Martha Donoghue¹, Virginia E. Kwitkowski¹, Wen-Hung Chen², Rajeshwari Sridhara³, Ann T. Farrell¹, Patricia Keegan¹, Geoffrey Kim¹, and Richard Pazdur¹

Letter to the Editor

Clinical
Cancer
Research

Focusing on Core Patient-Reported Outcomes in Cancer Clinical Trials—Letter

Mogens Groenvold^{1,2}, Neil K. Aaronson³, Anne-Sophie E. Darlington⁴, Deborah Fitzsimmons⁵, Eva Greimel⁶, Bernhard Holzner⁷, Jaap C. Reijneveld⁸, Krzysztof A. Tomaszewski⁹, Irma Verdonck-de Leeuw¹⁰, and Lonneke van de Poll-Franse³, on behalf of the EORTC Quality of Life Group

The EORTC Item Library

- All more than 1,050 EORTC Items
- Accessible for researchers inside and outside EORTC
- Searchable
- Origin of each item: history, characteristics

<https://www.eortc.org/app/uploads/sites/2/2022/10/EORTC-Item-Library-User-Guidelines.pdf>



Development of EORTC CAT Core for computer-adaptive testing (CAT)

- Developed **item banks for CAT measurement** of the **14 dimensions of the EORTC QLQ-C30** (except overall health/QL)
- For each HRQOL dimension, the new instrument:
 - Measures the **same** dimension as the QLQ-C30 scale
 - **Includes** the QLQ-C30 items
 - Is **backward compatible** with the QLQ-C30
- **Developed and tested in totally > 8,500 cancer patients** from 12 different countries, then **validated** in another large, international sample
- **Totally 230 new items** measuring the QLQ-C30 domains (average 19 items per item bank)
- **CAT individualizes assessment, improves measurement precision, power and range while reducing floor/ceiling effects**
- **CAT items can also be used for ‘static’ measurement**

Petersen MA et al. EJC 2010, QLR 2011, JCE 2012, QLR 2013, JCE 2015, QLR 2016, EJC 2018, QLR 2020, QLR 2023, etc.

New treatment

Hair loss

Nausea

Skin rash

Coughing

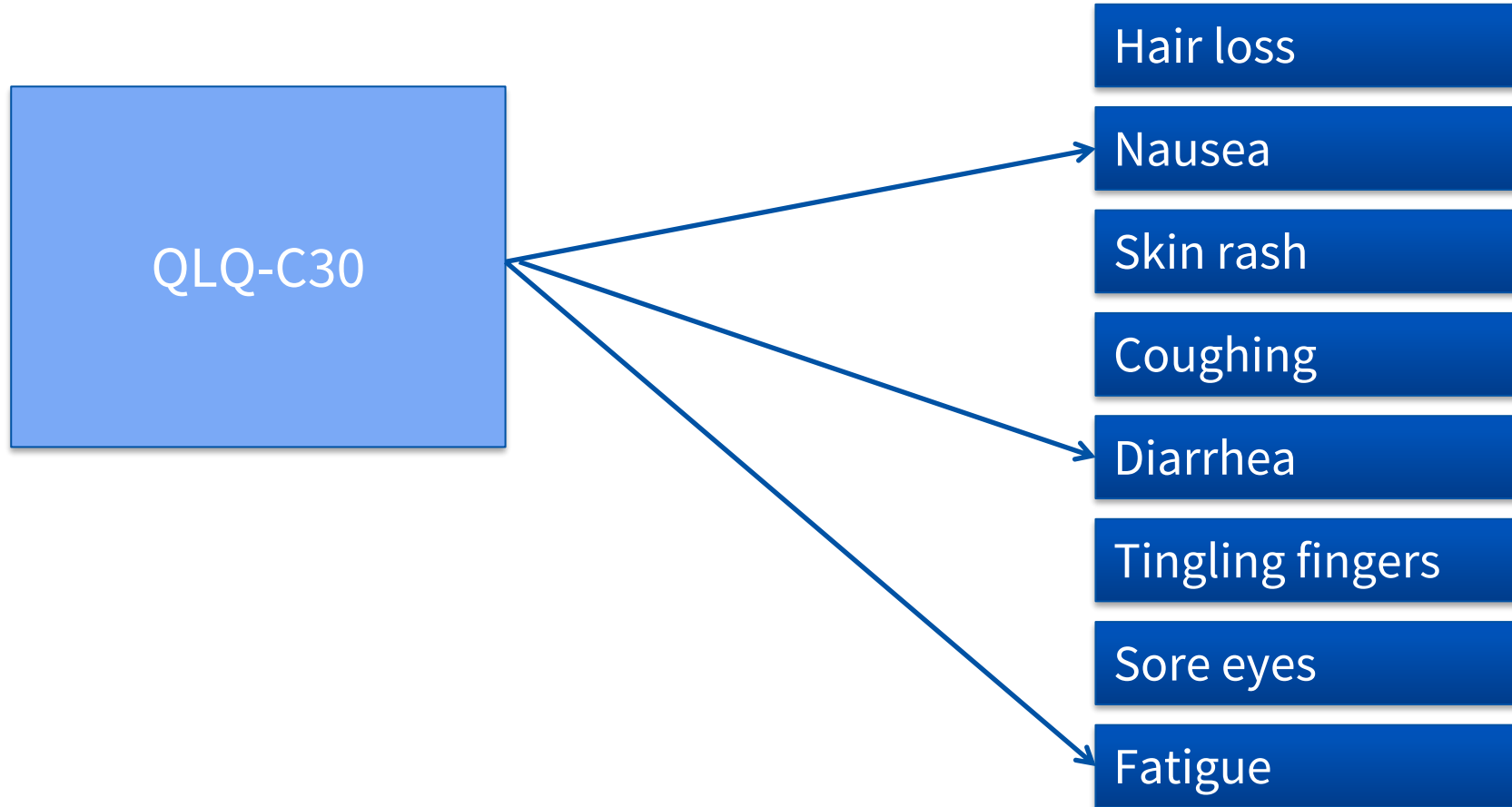
Diarrhea

Tingling fingers

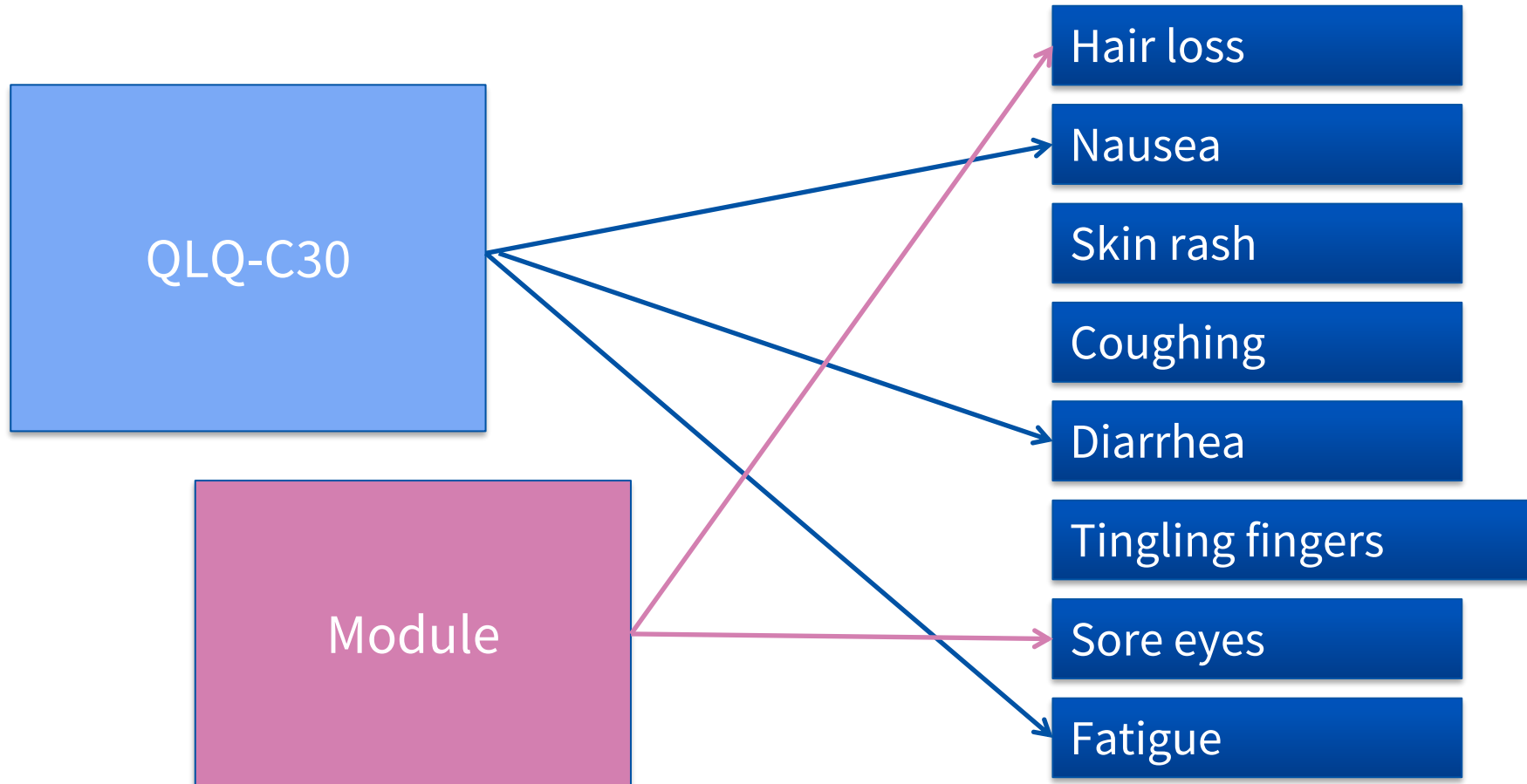
Sore eyes

Fatigue

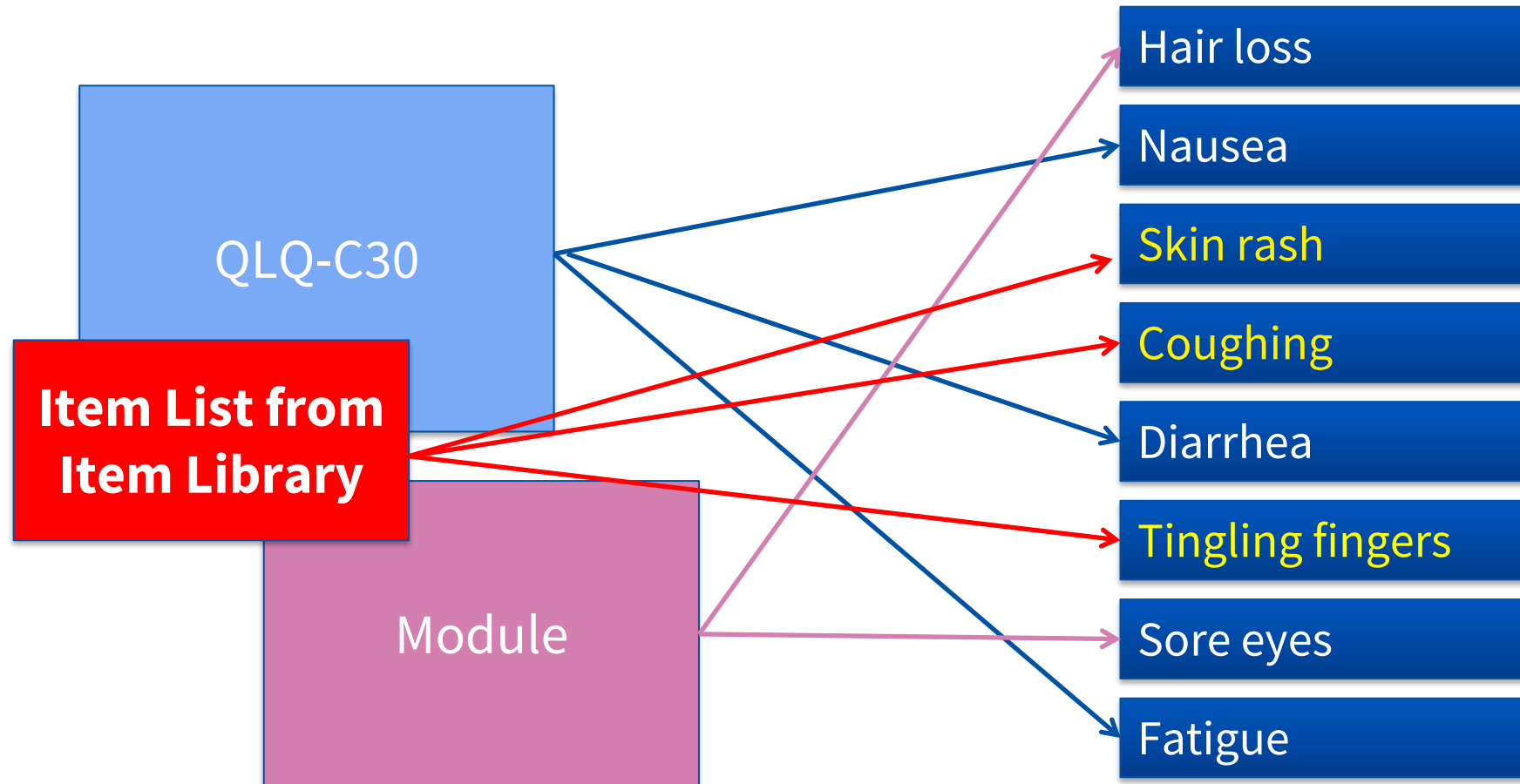
New treatment



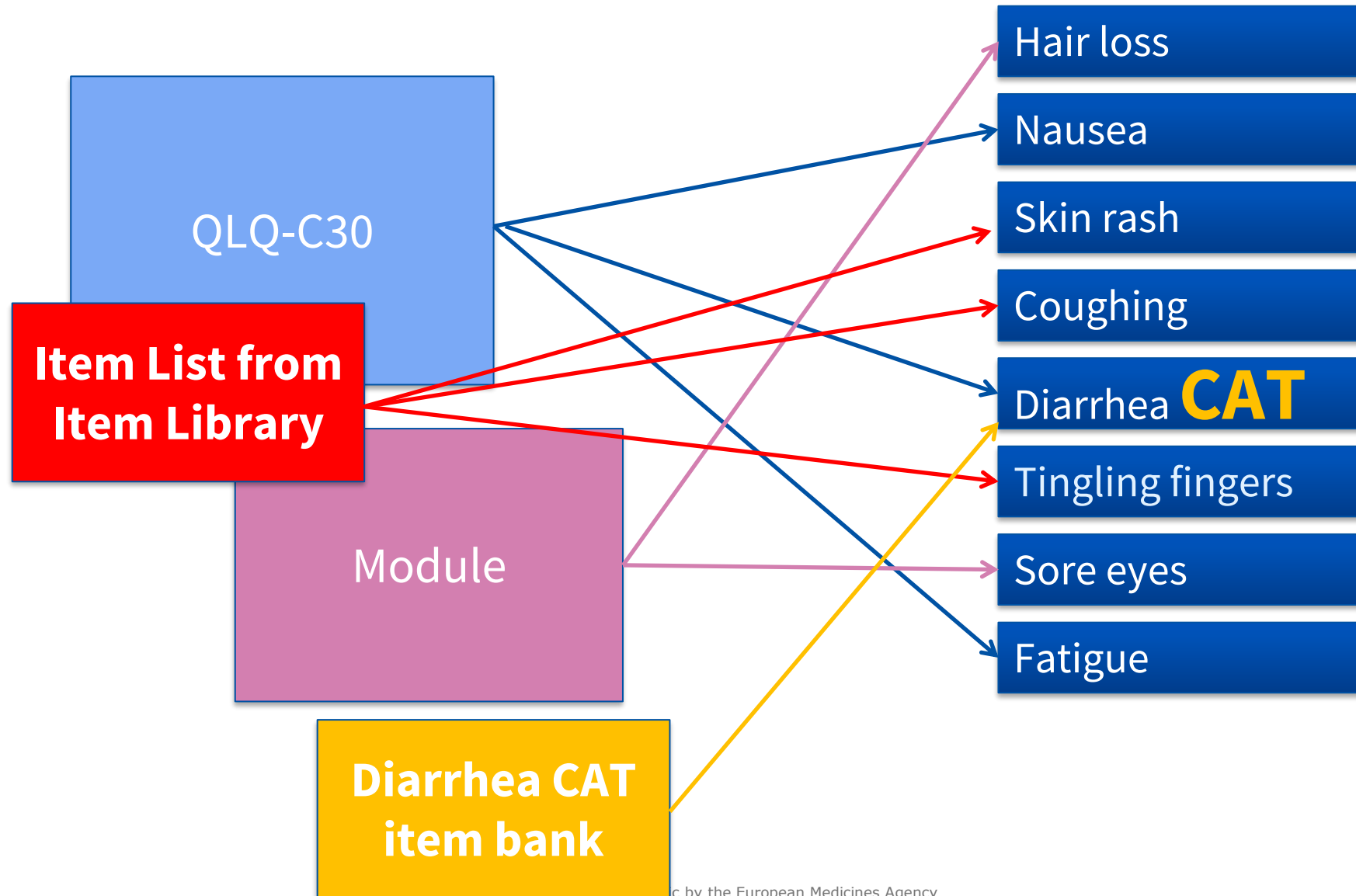
New treatment



New treatment



New treatment



Key concepts

- **Static (validated) questionnaires**
 - E.g., EORTC QLQ-C30 + EORTC modules, FACT-G
- **Computer-adaptive testing (CAT)**
 - E.g., EORTC CAT Core, PROMIS
- **Item bank**
 - A number of items calibrated for CAT, e.g., EORTC CAT Core emotional functioning item bank
- **Item Library**
 - A database of items, e.g., EORTC Item Library, PRO-CTCAE
- **Item List**
 - A selection of items from an item library

THANK YOU

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