To model impact estimates of Physical Activity (PA) interventions in NRW, reliable and representative data on PA prevalence and dose-response relations (RR) with associated diseases have to be identified.

**Dynamic modelling of Physical Activity (PA) in NRW**

- Estimating quantitative future impacts of intervention measures on the health outcomes of a target population with the DYNAMO-HIA model [1].
- Considering probable changes in individual risk exposure over the life course ('transition probabilities').

**Challenges**

Inconsistency in PA studies and research, concerning:
- Measurement technique
- Cut-offs and categorisation
- PA recommendations
- PA scaling
- PA type
- PA dose
- PA timing

**Data sources**

Checking PA prevalence data (D / NRW)
- KiGGS, SHARE, GEDA, BGS98, Microcensus, DEGS, DEAS, NRW Health Survey, HBSC, Eurobarometer etc.

Literature review for disease-specific risks (RR) of PA

**Data needed**

- PA prevalence (%)
- PA all-cause mortality (RR)
- Disease risks from PA (RR)
- Transition probabilities

**PA prevalence**

**Age 0-17:** KiGGS wave 1, RKI [2]
**Age 18-99:** GEDA-NRW 2009/2010, RKI [3]

DYNAMO-HIA requires age- and sex-specific input data.
- Data processing (imputation and smoothing) necessary.

**Relative risks estimates for PA**

14 meta-analyses and reviews and 4 large-scale individual studies were identified in the literature review. Inclusion criteria used: recent large-scale studies, conservative approaches, comparing 2 or 3 categories of PA. Studies that categorised exposure of PA in accordance to the prevalence data available for Germany / NRW were prior.

**References**


**Conclusion**

DYNAMO-HIA database expansion by risk factor physical activity is feasible albeit challenging. Assumptions and compromises have to be made with regard to transferability, e.g.

- International dose-response RR estimates from the literature are assumed to be applicable for NRW / Germany and for different age groups;
- Usage of different sources on prevalence data is necessary to cover the age range 0-99 years;
- Dose-response estimates as RR, unadjusted or adjusted, may need to be pooled.