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**EVOLIUCINĖ MEDICINA:
ŽMOGAUS RAIDOS PERSPEKTYVOS IR SVEIKATA
BESIKEIČIANČIOJE APLINKOJE**

**EVOLUTIONARY MEDICINE:
PERSPECTIVES ON HUMAN DEVELOPMENT AND HEALTH
CONSEQUENCES IN A CHANGING ENVIRONMENT**

Rengėjas:

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Organized by

the Doctoral School of Medicine and Health sciences
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FROM NUMBERS TO RELEVANCE: CHANGING PARADIGMS IN PEDIATRIC CARDIOVASCULAR RISK ASSESSMENT

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Medicine is recognised as an inherently vague discipline in its borders, concepts and evidence, while the thresholds separating normal from pathological are frequently not given by nature but determined more by convention and value judgement. However, when clinical decision-making is reduced to a single number with flawed origins and limited validity, this disciplinary vagueness remains underacknowledged.

Though these challenges apply conceptually to various fields, this lecture explores pediatric cardiovascular risk assessment as an instructive case study. With the growing burden of childhood cardiometabolic risk and evidence that adult cardiovascular disease has developmental origins, early risk stratification is increasingly recognised as clinically relevant. This assessment relies largely on blood pressure, evaluated against reference values that are interpreted through different perspectives - statistical, physiological and clinical. However, percentiles represent statistical but not actual biological boundaries. These reference values are method-dependent, growth-influenced and error-prone, and lack long-term causative evidence. Moreover, brachial pressure alone may misclassify physiological variants, such as spurious systolic hypertension of youth, or even measurement artefacts, as disease.

Finally, from an evolutionary and developmental perspective, blood pressure and hypertension cannot be strictly defined. What is considered hypertension today may once have represented a survival advantage, and the population distribution from which "normal" is drawn is itself shaped by selection. Recognising hypertension as a heterotypic - vascular and cardiac - phenomenon requiring comprehensive assessment through temporal dimensions, central pressure, cardiac adaptation and arterial stiffness, with meaningful interpretation of numbers and their inherent flaws, may better align risk assessment with surveillance, prevention and treatment. Ultimately, acknowledging this vagueness reinforces that clinical reasoning and decision making should not be reductionist and relying on single numbers but move towards conceptual and holistic understanding.

Keywords: blood pressure, cardiovascular risk, decision making, pediatric population