



Common sample 2013

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Sample referral information

4 years old boy

- splenomegaly (known since 6 months of life)
- failure to thrive
- special eating behavior
 - spontaneously rejecting protein

Sample was collected at the age of 17 years during a routine checkup while receiving specific treatment



Sample referral information

Diagnosis: Lysinuric protein intolerance

This sample was contributed by Dr. Jeannette Klein from Charité-Campus Virchow – Klinikum in Berlin.

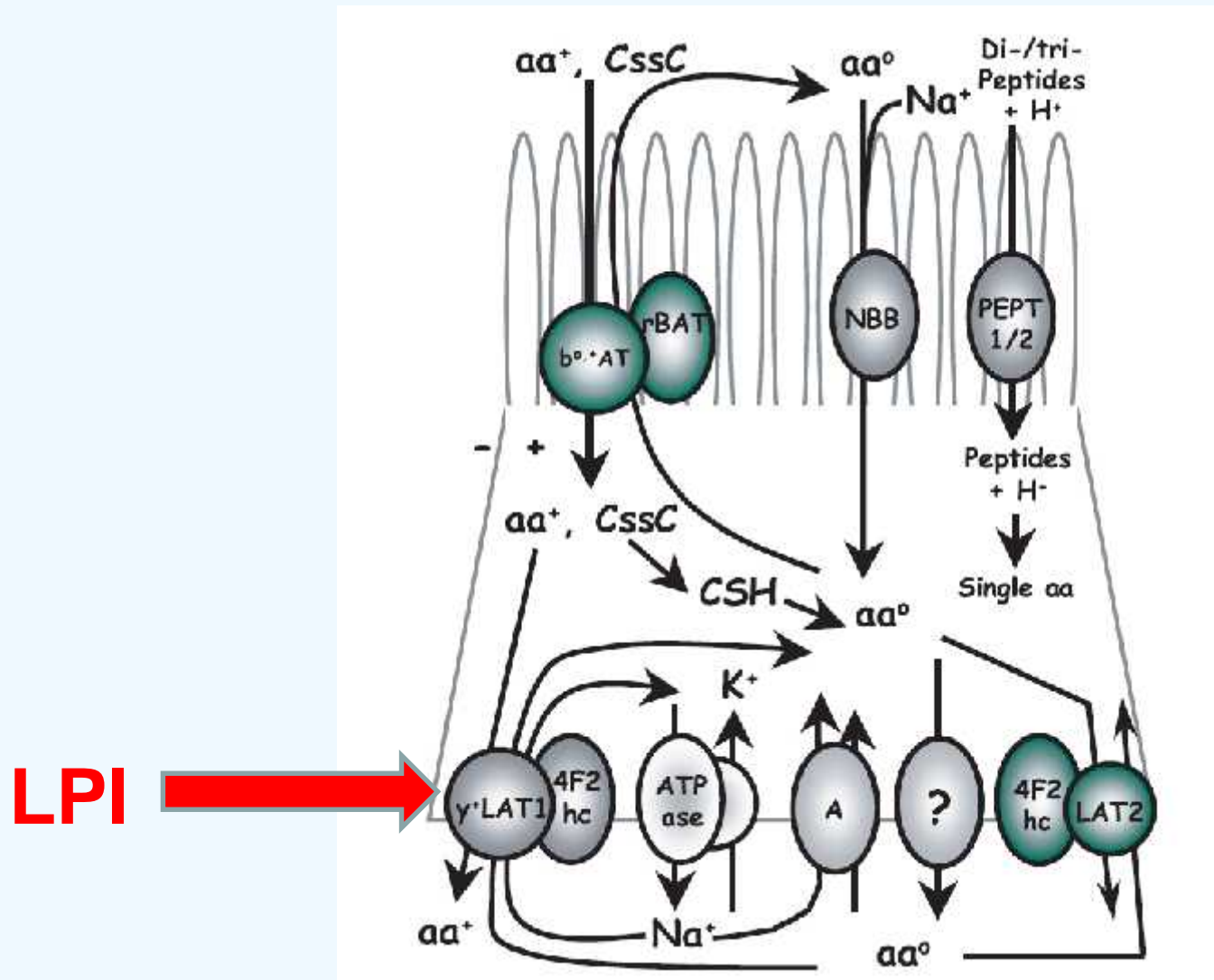
The patient is followed by Dr. Julia Hennermann.

Diagnosis confirmation

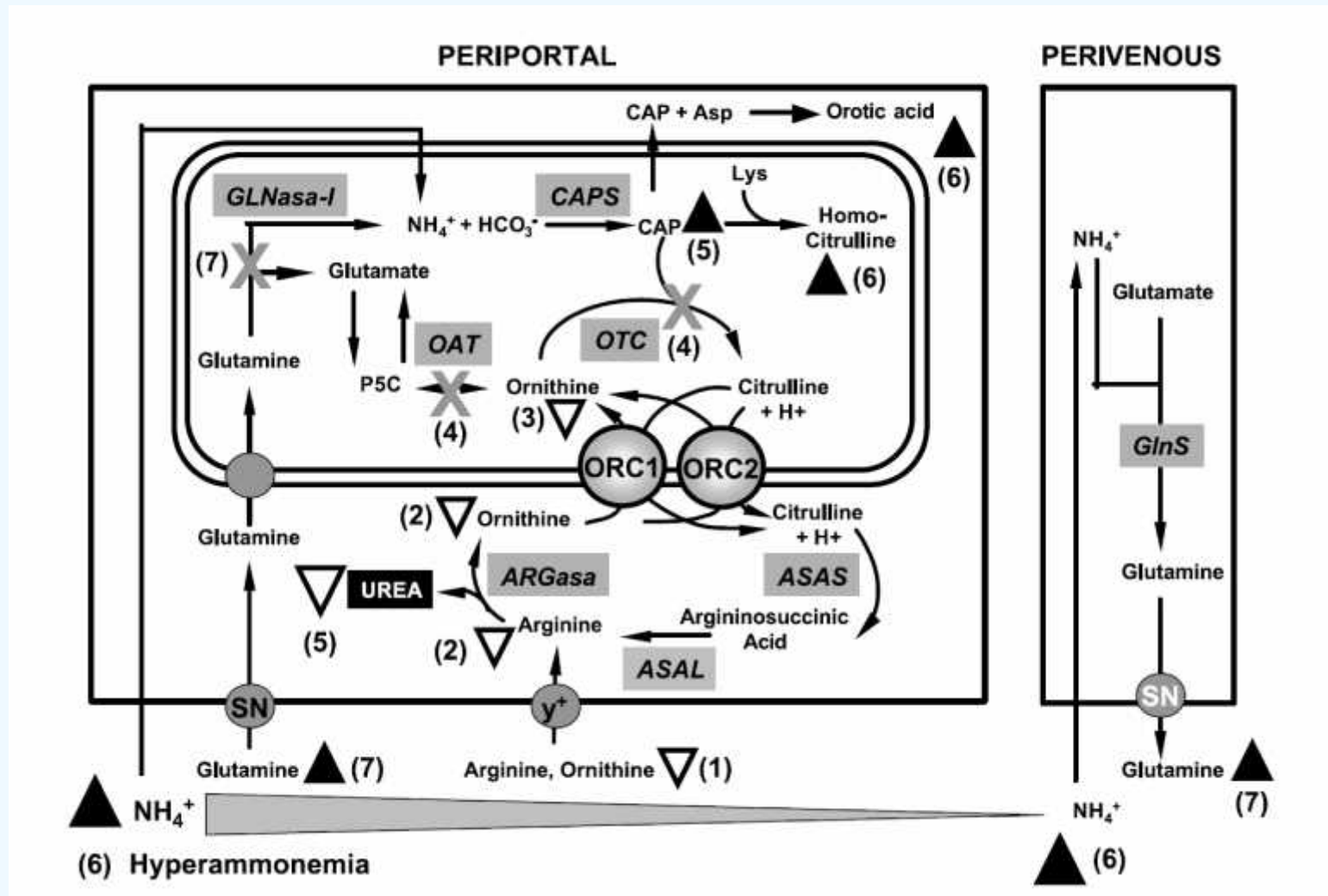
Mutation analysis of *SLC7A7* gene

- homozygosity for a 2-bp deletion c.253_254delTT in exon 3
- This mutation has been described before in the literature and results in a frameshift and a premature translation termination codon.
- Mutation analysis has been performed by Drs. Uusitalo and Laitinen in Turku, Finland.

Model for the absorption/reabsorption of amino acids in an intestinal/proximal tubule epithelial cell



Dysfunction of the urea cycle in LPI



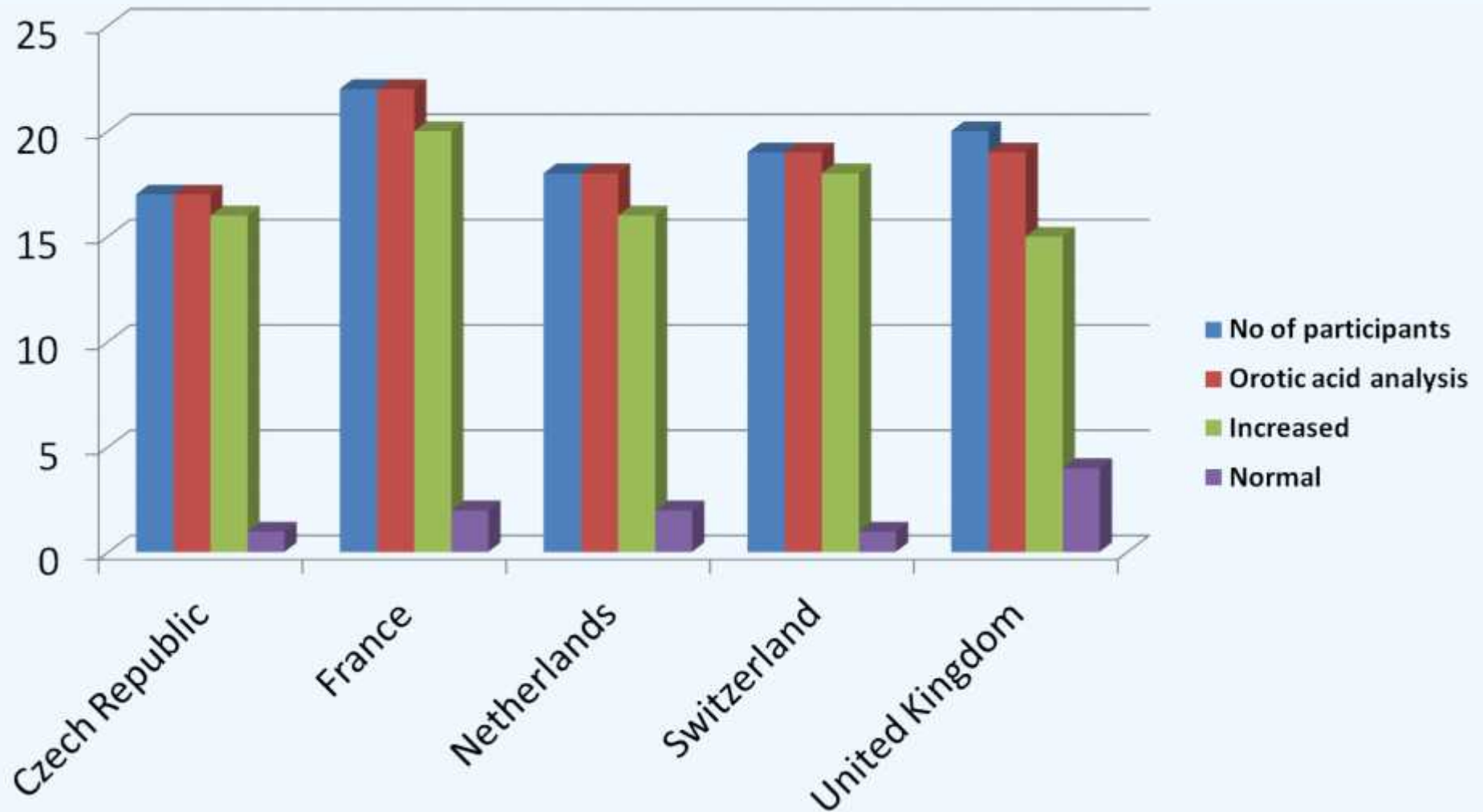
DPT Centers

- Czech Republic 20 labs (3 no answer)
- France 23 labs (1 no answer)
- Netherlands 19 labs (1 no answer)
- Switzerland 19 labs
- United Kingdom 22 labs (2 no answer)

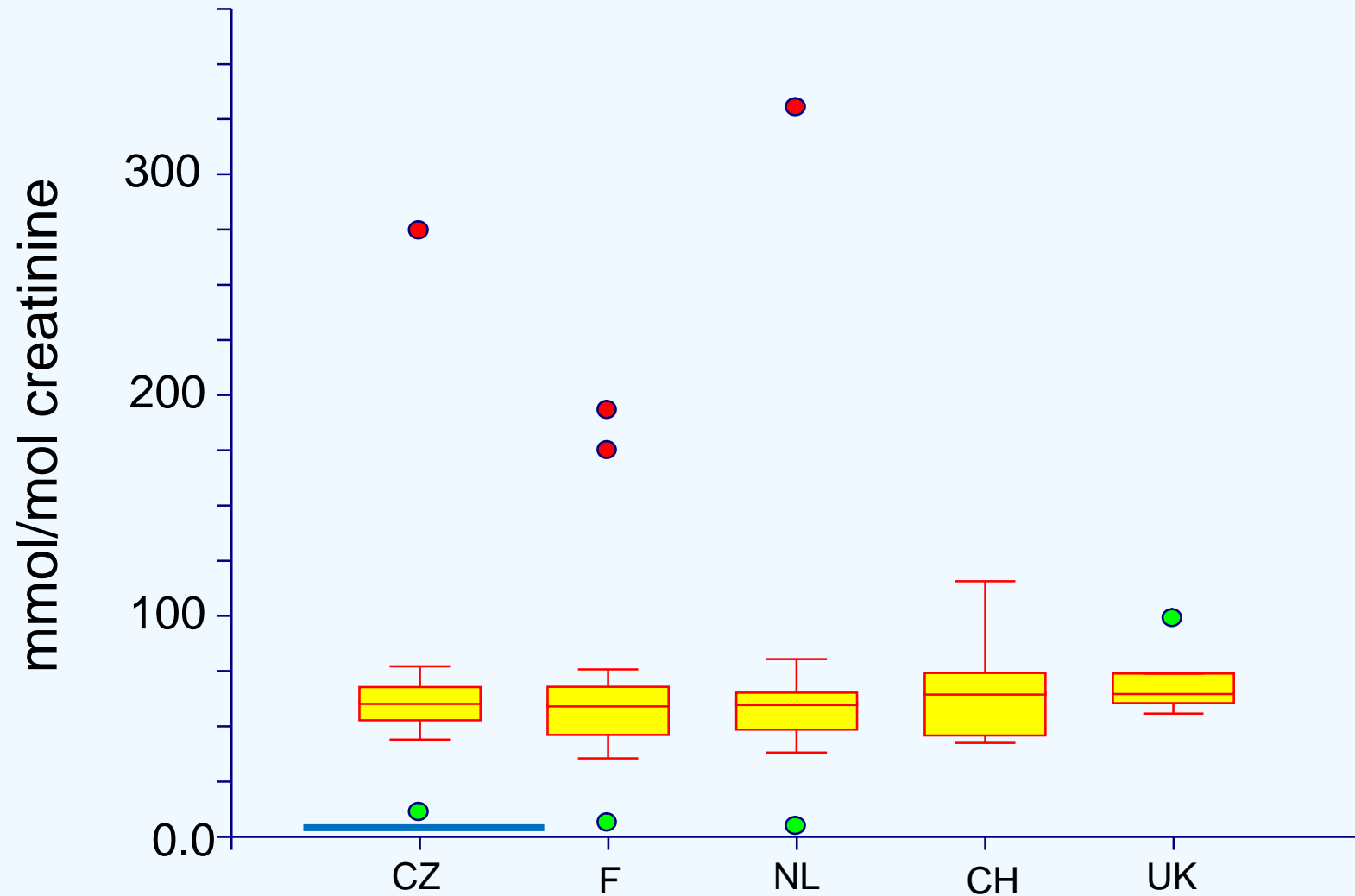
Creatinine in urine

DPTC	Czech Republic	France	Netherlands	Switzerland	UK
No. of participants	17	23	18	19	20
Lowest	4.4	4.4	4.5	4.5	4.4
Highest	5.4	5.4	5.8	5.3	5.3
Median	4.9	5.0	5.0	4.9	4.9
Mean	4.9	5.0	5.0	4.9	4.9
Interlab CV %	6.3%	4.8%	6.9%	5.4%	4.5%

Orotic acid in urine

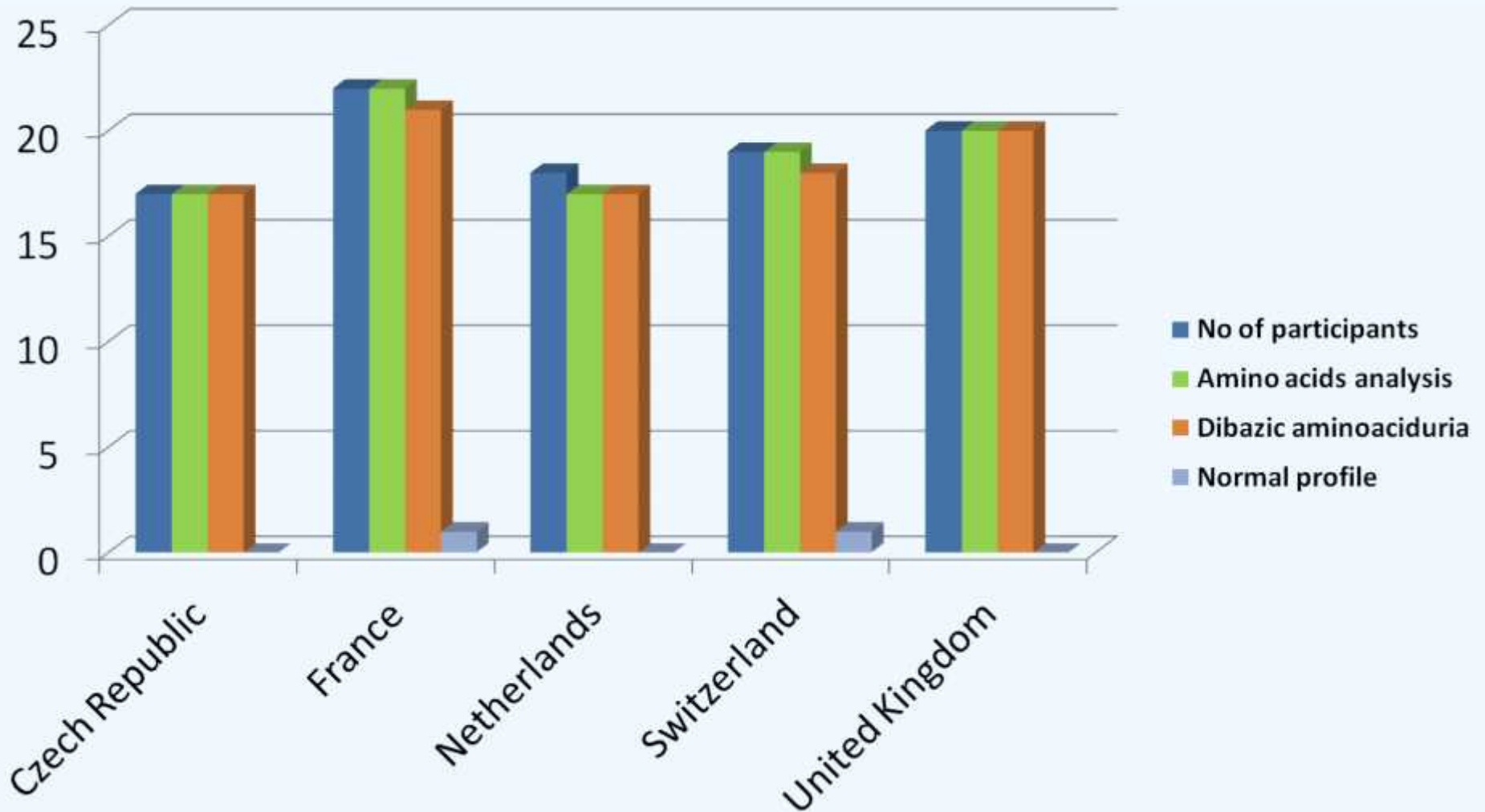


Orotic acid in urine

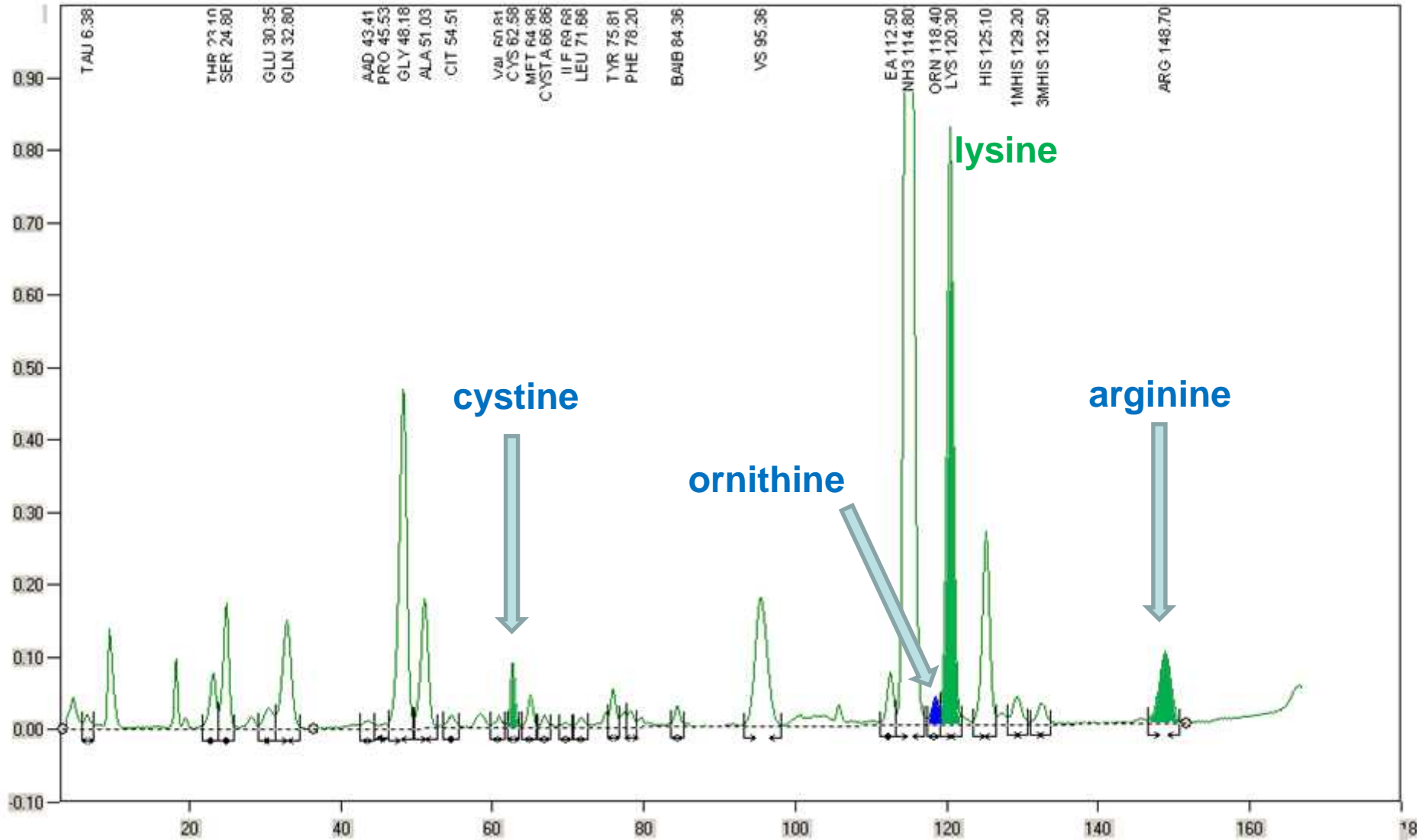


IQR and adjacent values, outliers

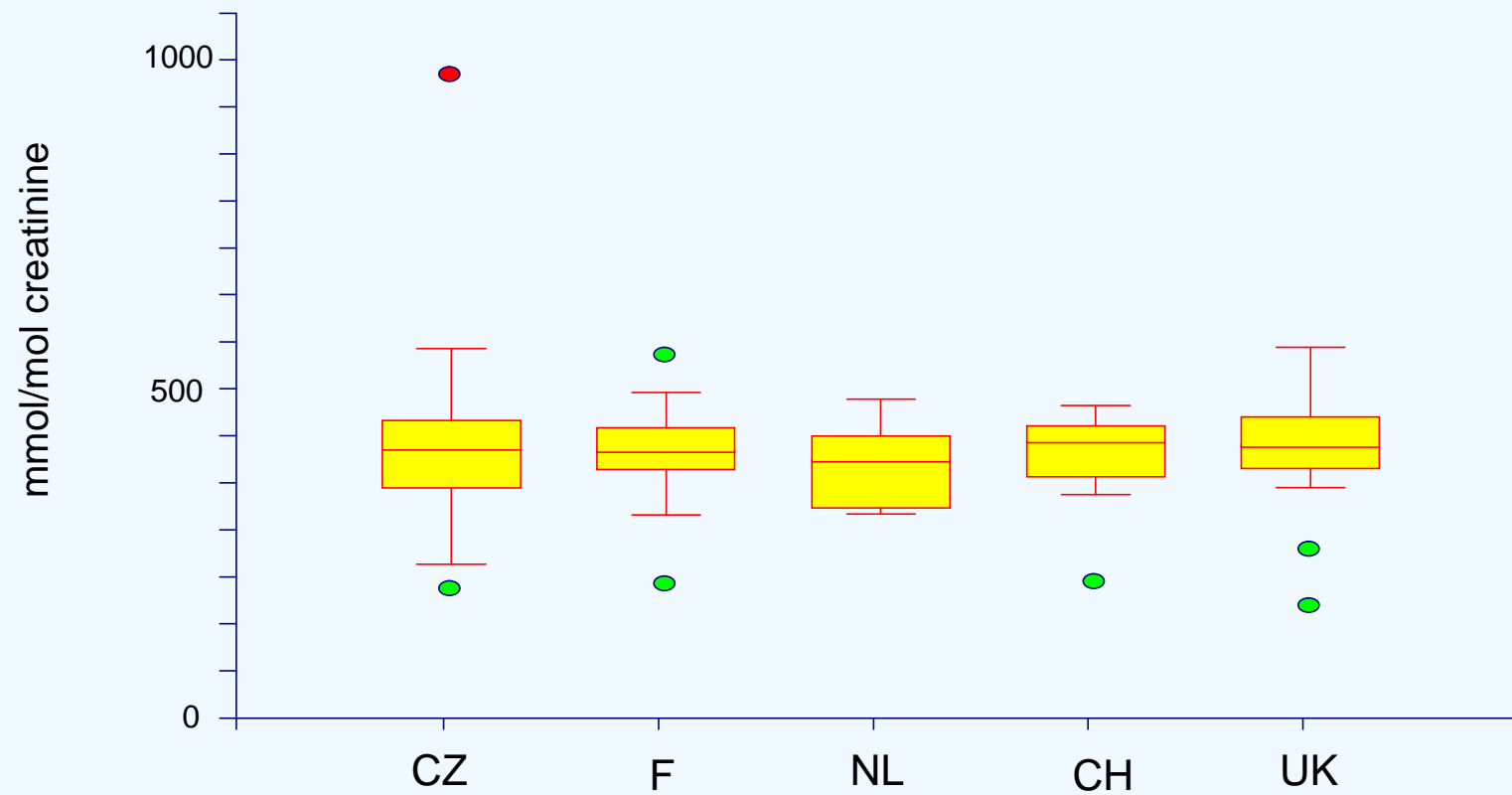
Amino acids in urine



Amino acids profile (IEC-NHD) in urine



Lysine in urine



Analytical performance

Amino acids

Dibasic hyperaminoaciduria

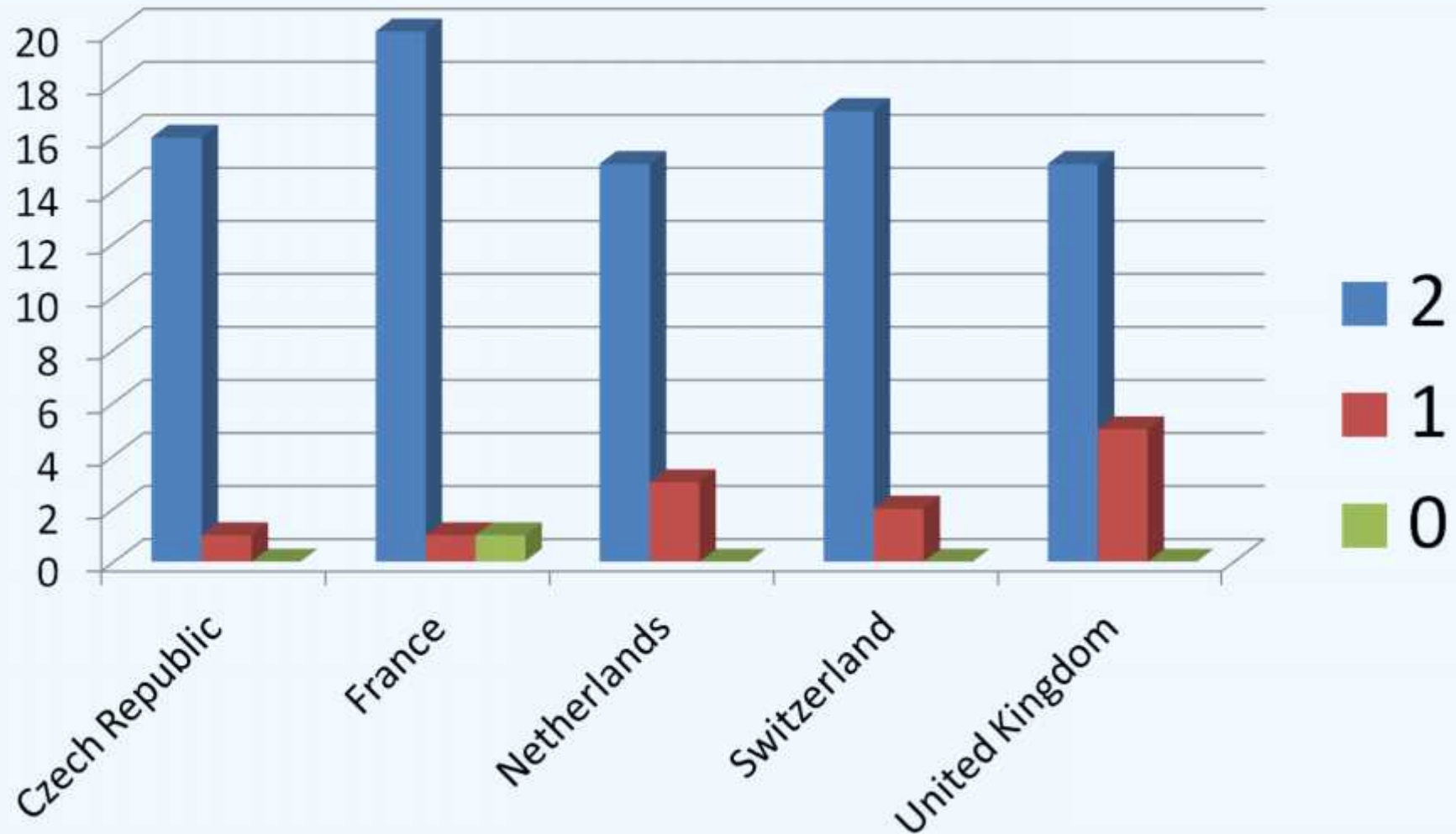
1 point

Organic acids/Purines/Pyrimidines

Increased excretion of orotic acid

1 point

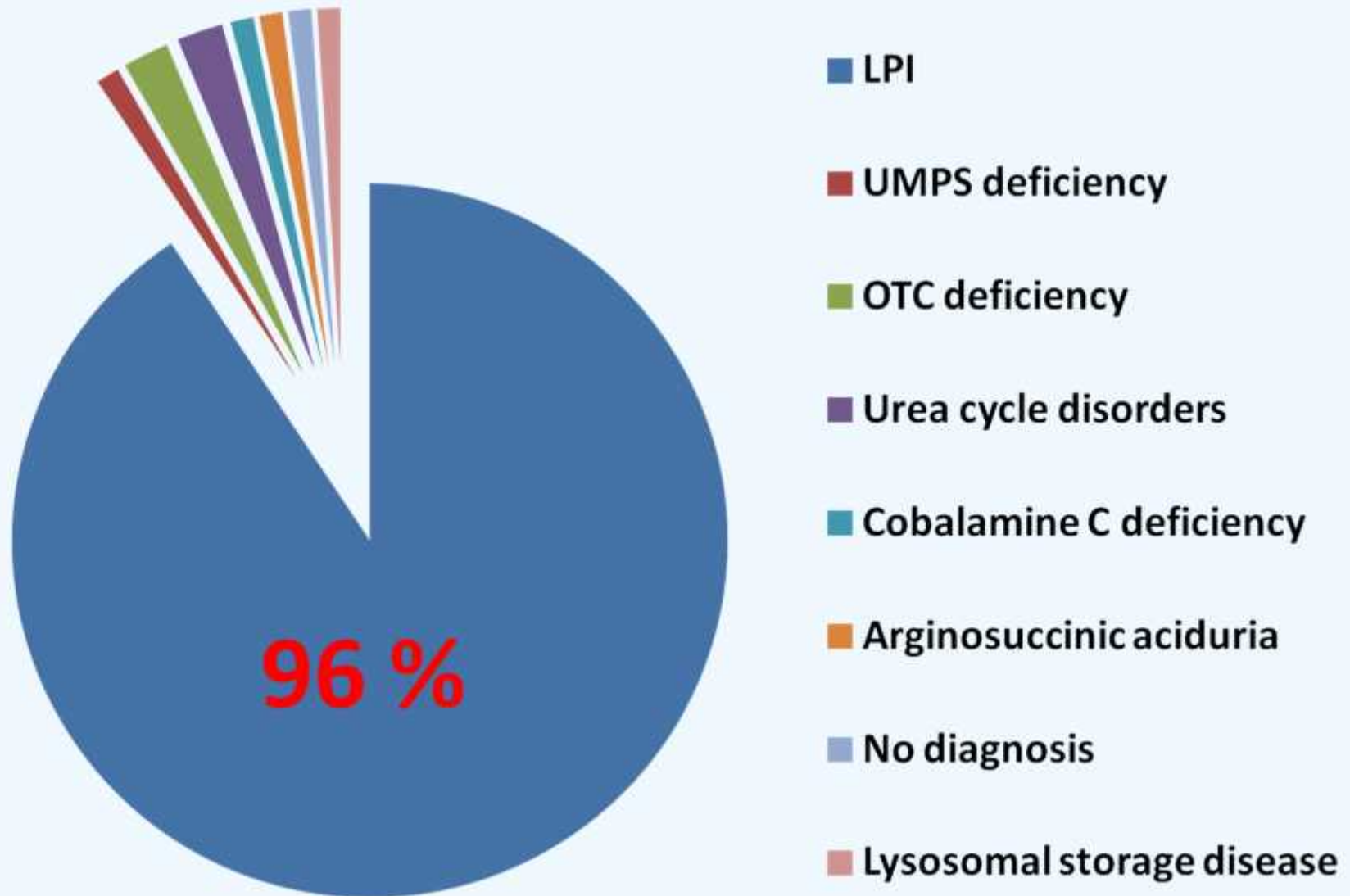
Analytical performance



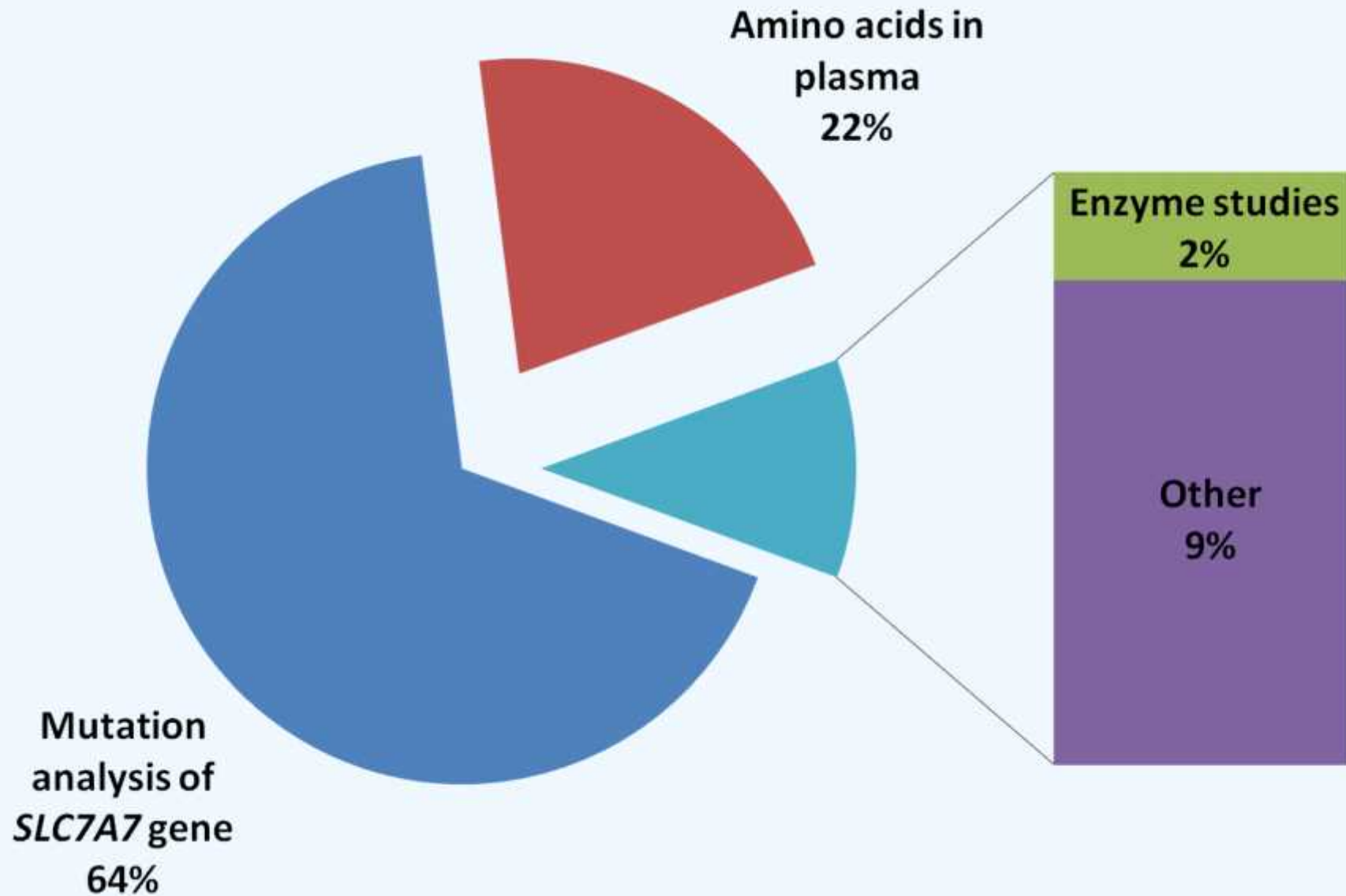
Interpretation and recommendation

- Scientific Advisory Board agreed in November 2012 that from 2013 the qualitative schemes will all adopt the same scoring system as other genetics disciplines
- Two points will be given for interpretation including recommendation
- Concept of „critical error“ will be introduced later
- Harmonization of this new approach among the DPT schemes is ongoing process

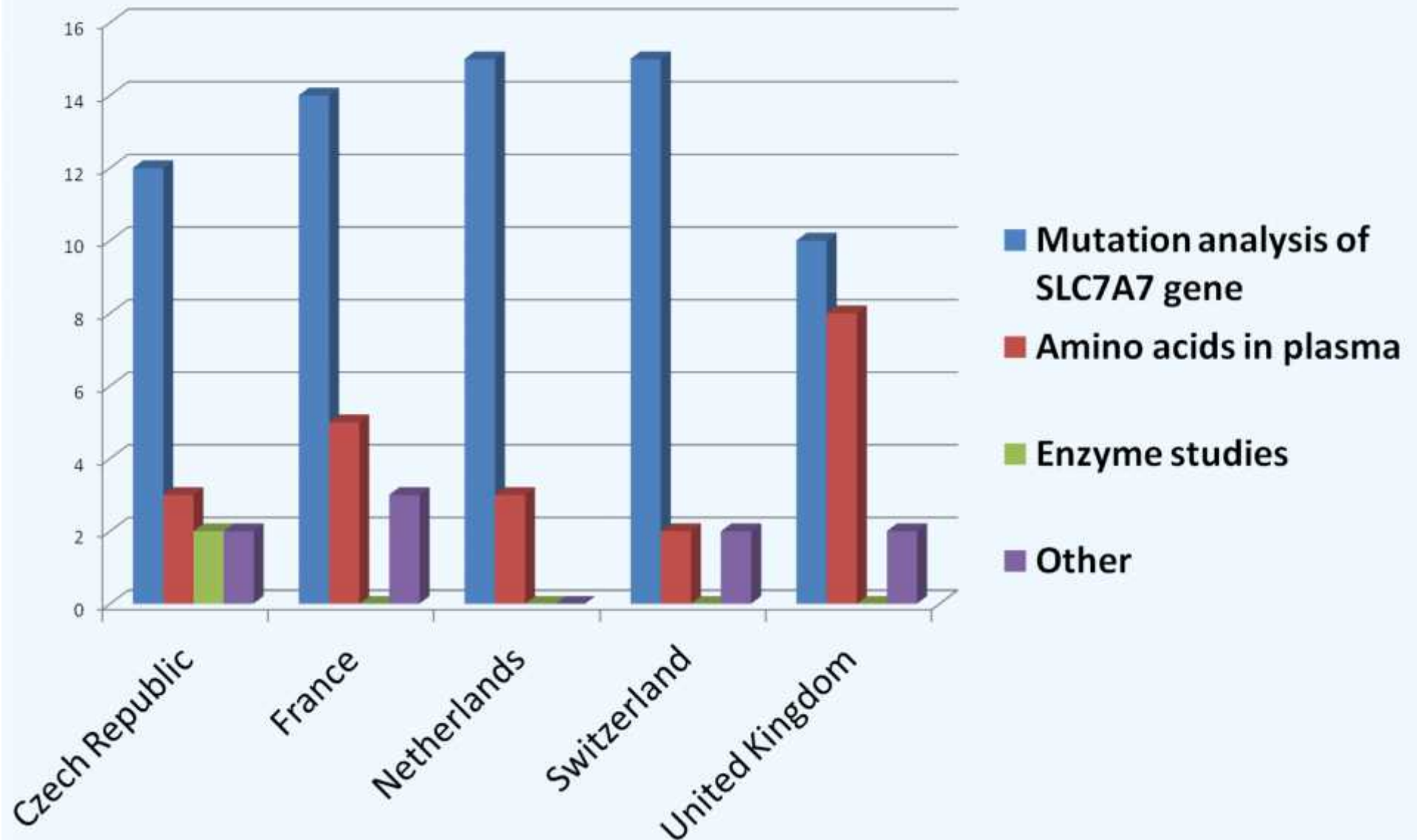
Interpretation



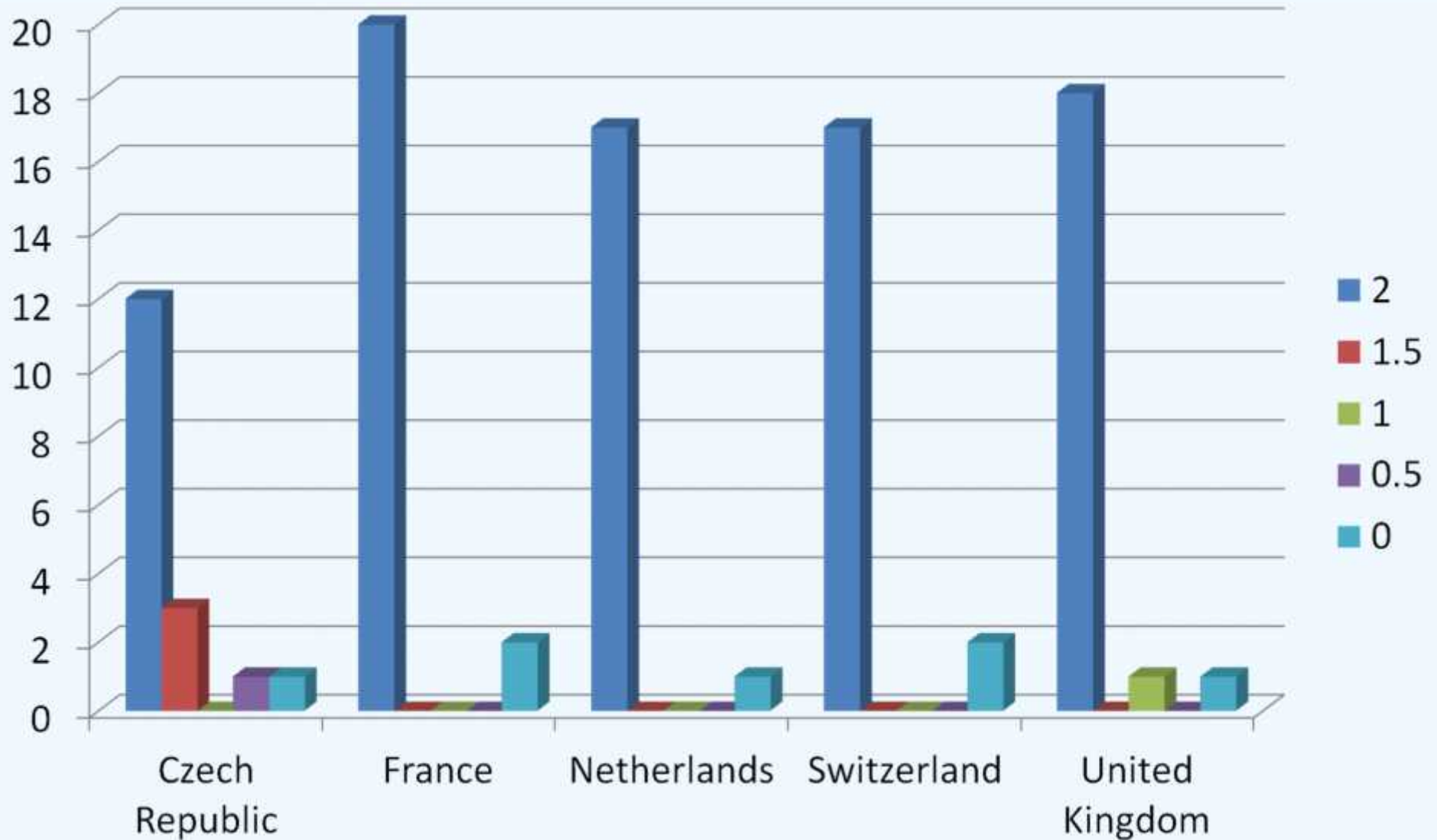
Recommendations



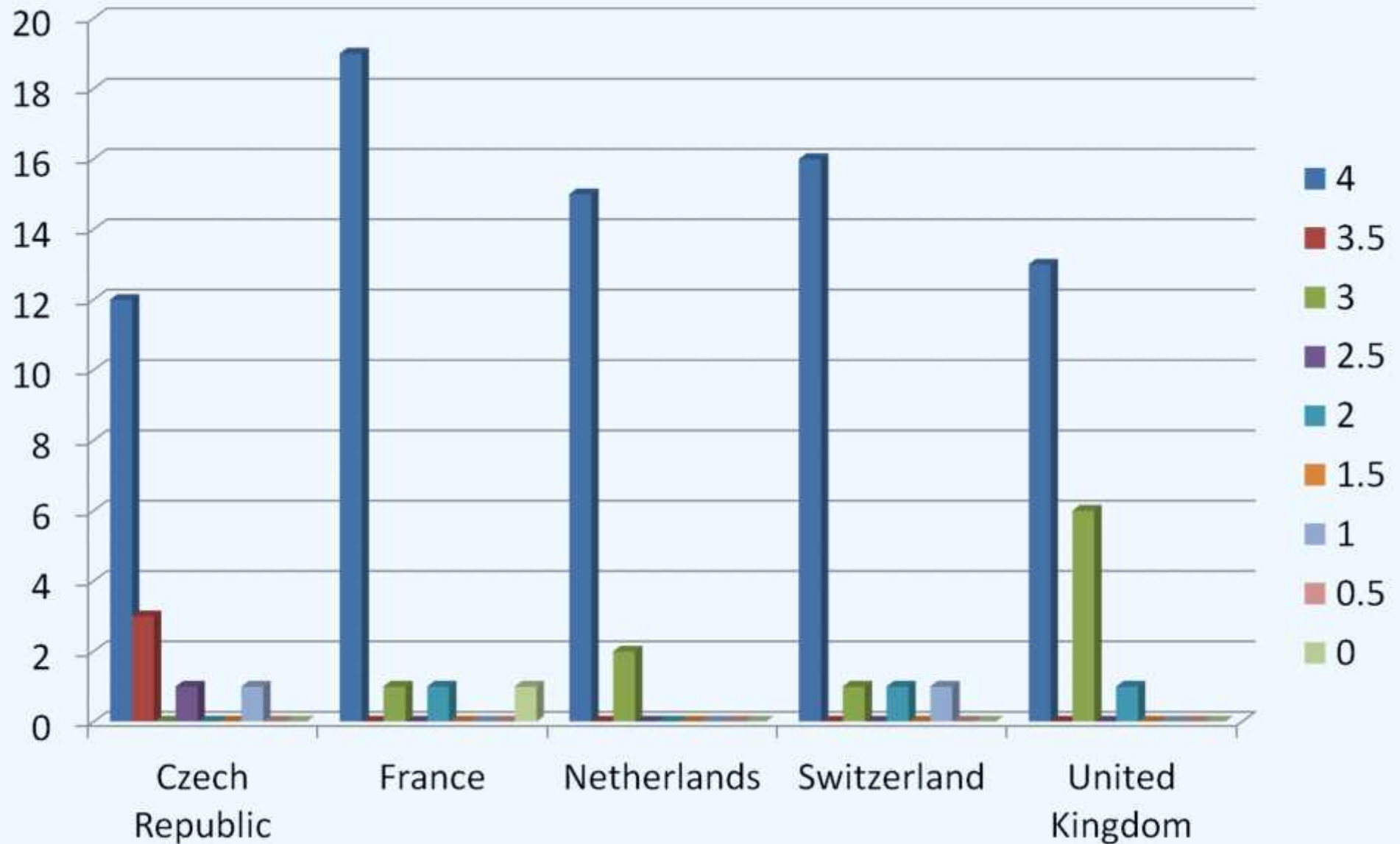
Recommendations



Interpretative proficiency



Total scoring



Summary

- Typical DPT sample with good proficiency scores
- 10/95 participants did not detect elevated orotic acid
- The DPT Centers are working towards harmonization of scoring interpretative proficiency that includes recommendations



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