whole blood 95%CIs for response to PPD were 113.7–282.7 pg/ml versus 236.9–367.4 pg/ml ($P < 0.0005$ Mann-Whitney U-test); while the respective 95%CIs for ESAT-6 were 35.9–154.4 pg/ml versus 59.3–126.3 pg/ml ($P = 0.013$ Mann-Whitney U-test). When using 70 pg/ml as a cut-off point, with nonTB inflammatory lung diseases 79.5% patients had no IFN-γ response to ESAT-6 and 47.7% patients had no IFN-γ response to PPD as compared with 66.7% and 20% TB patients who had no response to ESAT-6 and PPD consequently. The diagnostic accuracy of this test is 66.4%. In case of IFN-γ release lower than 70 pg/ml odds ratio for nonTB inflammatory lung diseases is 3.7. The positive predictive value is 63.6% (95%CI 48.4–77.2) and the negative predictive value is 67.6% (95%CI 60.4–73.9%, $P < 0.001$).

Conclusion: The significance of the antigen-specific IFN-γ release assay in differential diagnosis between TB and nonTB inflammatory lung diseases is not so high as we need in the clinical practice. Probably it is due to high level of the latent tuberculosis.

PS-101438-13 An in vitro assay of anti-mycobacterial immunity predicts nutritional risk factors for tuberculosis

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Background: A blood test to predict TB susceptibility would facilitate the targeting of appropriate interventions to those at greatest risk.

Methods: We optimised a whole-blood assay of human anti-mycobacterial immunity. Luminescent mycobacteria were added to 839 whole-blood samples from healthy volunteers at risk of TB in Peru. The samples were incubated for 96 hours at 37°C and a portable luminometer was used to measure whether the participants' blood killed or supported mycobacterial growth. The results were analysed for nutritional associations.

Results: Median body weight was 60 kg, 505 (60%) were female and the median age was 28 years. Indicators of poor nutrition were strongly associated with increased growth of mycobacteria in whole blood. Thus blood from malnourished individuals had impaired immune restriction of mycobacterial growth. Specifically, in linear regression analysis, the standardised beta-coefficient for body mass index was −0.17 ($P < 0.001$). There were similar associations with both body fat (−0.15, $P < 0.001$) and body protein stores (−0.17, $P < 0.001$), see Figure. These associations were maintained after adjusting for age, sex and previous TB diagnosis ($P < 0.001$ for all associations). There was a strong positive association between body density (but not body weight) and the growth of mycobacteria in whole blood, implying increased susceptibility to TB, in both adjusted and unadjusted analysis.

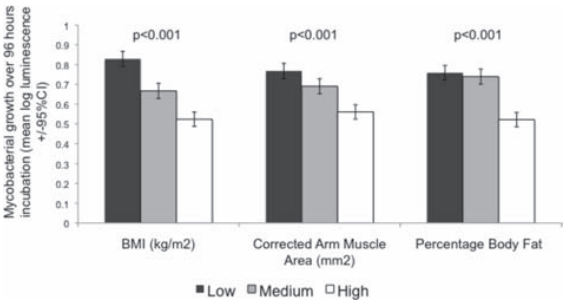

Figure Mycobacterial growth in whole blood: the effect of nutrition.

Conclusions: Poor nutrition has one of the largest evidence bases as a risk factor for TB. We found that a simple in vitro assay of whole blood restriction of mycobacterial growth demonstrated this association between poor nutrition and TB susceptibility and provided evidence for mediation by both protein and calorie nutrition. This provides insights into nutritional determinants of TB susceptibility and indicates that this assay may help to identify individuals most at risk of TB and enable evaluation of interventions aiming to reduce TB susceptibility.

PS-100087-13 Evaluation of the QuantiFERON TB Test (QFT-TB) in detection of children infected with *Mycobacterium tuberculosis*

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Introduction: Recently a new diagnostic test (Quantiferon-TB Gold) which measures the production of interferon gamma in whole blood has been introduced. The aim of this study is to compare the performance of the IFN-gamma assay with Tuberculin skin test for the identification of latent TB infection in childhood in the Pediatric Pulmonary Ward of Masih Daneshvari Hospital.

Material and methods: The present cross-sectional study was conducted on 100 children, aged 2 months 15 years during 2007–2008. Children were divided into three groups of Case, Contact and Control. Whole blood was collected for measuring Interferon-gamma using Quantiferon-TB Gold kit In this procedure, *Mycobacterium tuberculosis* specific antigens (ESAT-6 and CFP-10) were used.

Result: Smear of the gastric washing (3×) was pre-