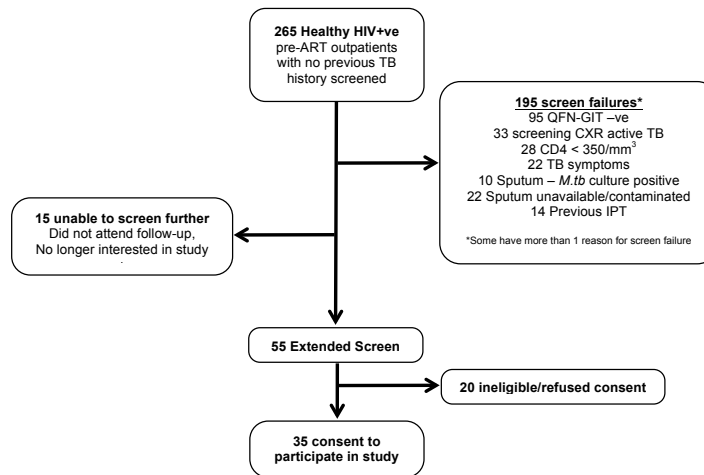


## Supplementary information

a



b

Clinical characteristics of 265 screened participants			
Parameter	Result	Parameter	Result
Age med. – Med. (IQR)	32 (28–38)	Sputum M.tb culture positive (n = 244)	4.1%
Female	85%	TB symptom screen positive	8.7%
CD4 (/mm <sup>3</sup> ) – Med. (IQR) (n = 259)	520 (429–673)	CXR – Active TB	13%
CD4 > 350/mm <sup>3</sup>	89%	CXR – Inactive TB	32%
QFN-GIT Positive	64%	Previous IPT – (n = 262)	5.3%

### Supplementary Figure 1 – Screening approach and participant characteristics

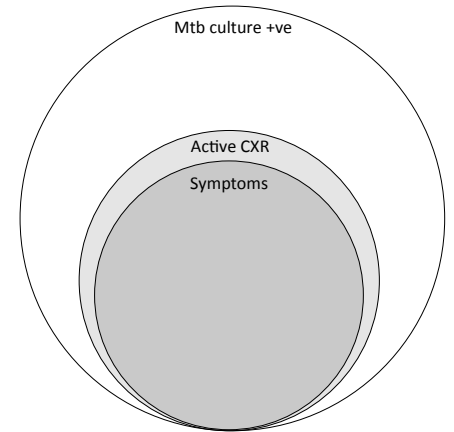
a. Screening approach and screen failures

b. Clinical characteristics of 265 screened participants

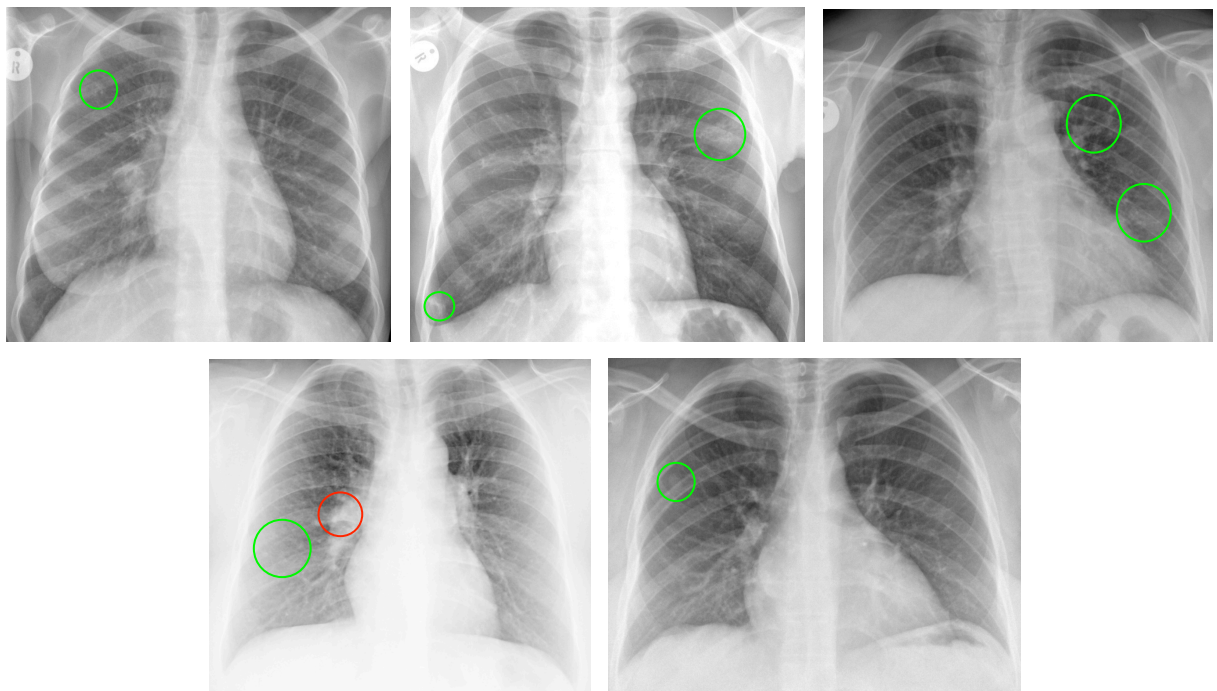
a

Clinical characteristics of participants excluded at screening with prevalent TB from 244 participants with sputum culture results			
Parameter	Culture positive	Culture negative	<i>p</i> value
Number	10	234	NA
Age – Med. (IQR)	30.5 (26–38)	33 (28–38)	0.39
Female	90%	85.9%	1.00
CD4 (/mm <sup>3</sup> ) – Med. (IQR)	502 (448–605)	527 (432–685)	0.58
QFN-GIT Positive	90%	64.1%	0.172
TB symptoms	40%	7.2%	<b>0.007</b>
CXR – Active TB	50%	11.5%	<b>0.026</b>
Previous IPT	0%	6.0%	1.0

b



c



**Supplementary Figure 2 – Screened participants excluded with prevalent TB (sputum culture positive for *M.tb*)**

a. Comparison of clinical characteristics between those screened with and without prevalent TB. The gaussian distribution of the data was determined by Shapiro-Wilk test and variance compared by F-test. Non-parametric data then compared using Mann-Whitney *U* test and parametric data compared using t-test. Proportions were compared by  $\chi^2$  test or Fisher's exact test (if the contingency included a number  $\leq 5$ ).

b. Area proportional Venn diagram showing overlap of symptoms and CXR with evidence of active TB.

c. Screening CXR for 5 participants with prevalent TB with evidence of active TB on CXR. Green circle outlines parenchymal lesions and red circle hilar lymphadenopathy.

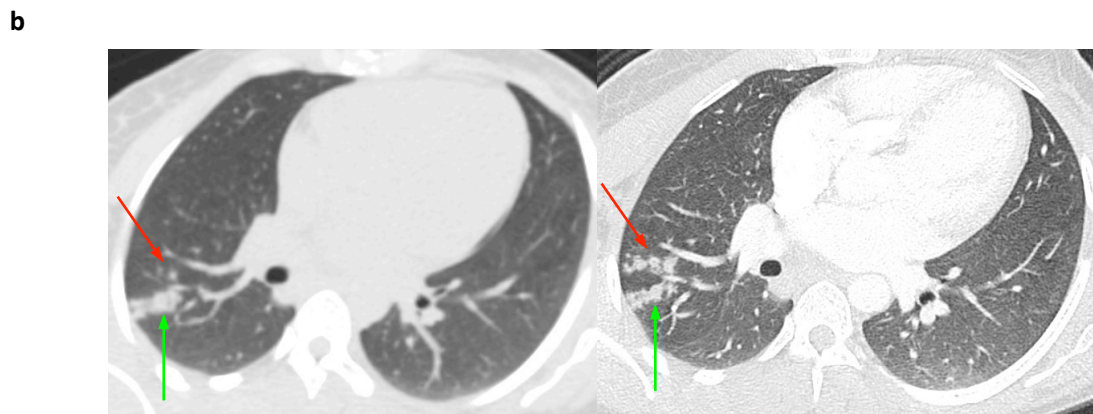
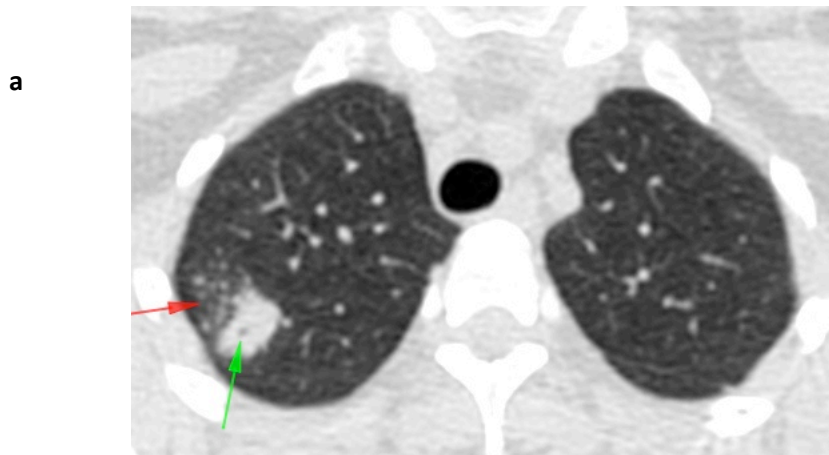
Clinical characteristics of 35 participants by PET/CT status				
Parameter	Undergoing PET/CT (n=35)	Subclinical TB (n=10)	Latent TB – no subclinical pathology (n=25)	p value
Age years – Med. (IQR)	31 (27–38)	29.5 (27–35)	32 (27–39)	0.17
Female	91%	90%	92%	1.00
CD4 (/mm <sup>3</sup> ) – Med. (IQR)	517 (393–658)	406 (384–548)	517 (435–724)	0.14
Viral load (copies/ml) – Med. (IQR)	10,800 (1,982–26,052)	18,949 (6,878–51,166)	9,958 (625–20,702)	0.07
WHO clinical – stage 1 (%) : stage 2 (%)	80 : 20	70 : 30	84 : 16	0.38
Years HIV positive – Med. (IQR)	2.1 (0.8–5.2)	4.5 (0.8–7.5)	1.7 (0.9–3.5)	0.32
CRP (mg/L) Med(IQR)	1.9 (1–4)	2.1 (1–4)	1.9 (1–3.9)	0.95
WCC (x10 <sup>9</sup> /L) – Med. (IQR)	5.34 (4.49–6.53)	5.59 (4.24–7.38)	5.34 (4.92–6.42)	0.97
ESR (mm/hr) – Med. (IQR)*	37.5 (27–50)	41 (28–83)	36 (26–46.5)	0.39
Pulse (bpm) – Med. (IQR)	71 (67–75)	74 (68–75)	70 (67–75)	0.23
Respiratory rate (brpm) – Med. (IQR)	16 (16–19)	16 (16–18)	16 (16–20)	0.95
Temperature (°C) – Med. (IQR)	35.9 (35.5–36.4)	36.0 (35.5–36.6)	35.8 (35.6–36.5)	1.00
Systolic Blood Pressure (mmHg) – Med. (IQR)	119 (108–129)	107 (104–118)	123 (116–129)	0.08
QFN-GIT TBAg-Nil (IU/ml) – Med. (IQR)	1.76 (0.59–7.52)	4.57 (0.69–9.1)	1.76 (0.59–4.11)	0.53
Screening CXR – Inactive TB	40%	60%	32%	0.23
Screening CXR – Active TB	0%	0%	0%	1.00
BMI (kg/m <sup>2</sup> ) – Med. (IQR)	28.7 (24.5–33.3)	24.8 (23.3–29.5)	28.8 (26.8–34.1)	0.09
% weight change/28 days – Med. (IQR)	–0.60% (–1.09–+0.42)	–0.84% (–1.38– –0.50)	–0.24% (–1.03–+0.93)	0.10
History of household contact **	46%	40%	48%	0.72
History of TB treatment or IPT	0%	0%	0%	1.00
BCG scar (n=34)	37%	33%	40%	0.72
Never smoked	89%	90%	88%	1.00
Current Biomass exposure (n=34)	2.9%	0%	4.2%	1.00
Never drunk alcohol	80%	80%	80%	1.00
Unemployed	63%	40%	72%	0.12

**Supplementary Table 1 – Participant characteristics in those with and without subclinical pathology**

Clinical characteristic of the 35 recruited participants on day of screening. The gaussian distribution of the data was determined by Shapiro – Wilk test and variance compared by *F* – test. Non-parametric data then compared using Mann – Whitney *U* test and parametric data compared using *t* – test. Proportions were compared by  $\chi^2$  test or Fisher’s exact test (if the contingency included a number  $\leq 5$ ).

\* ESR commonly raised in health HIV infected persons. \*\* = TB contact median of 7 years previously (IQR 2.5 – 17 years).

CRP = C – reactive protein, WCC = White cell count, ESR = Erythrocyte Sedimentation Rate, WHO = World Health Organization, BMI = Body Mass Index, BCG = Bacillus Calmette-Guérin vaccine, % weight change/28 days = change in weight over screening period as a percentage (standardized as per 28 days)



**Supplementary Figure 3 – Radiographic images showing disease extent and progression**

a. Coronal section of CT component of initial FDG-PET/CT in participant (labelled “6” in **Fig. 1e**) who developed symptoms seven days following scan and was culture positive (smear negative). Green arrow shows small area of cavitation within dense consolidation surrounded by area of tree-in-bud opacification (red arrow)

b. Multi-planar reconstructions (MPR) of CT images of same participant (labelled “5” in **Fig. 1e**) 4 weeks apart (2<sup>nd</sup> CT scan (with intravenous contrast) clinically indicated). Left panel from initial FDG-PET/CT scan shows area of infiltration, which has progressed down adjacent lobule in 2<sup>nd</sup> scan in right panel 4 weeks later. Patient developed TB symptoms 30 days after initial scan but was sputum culture negative. Symptoms and radiographic changes improved with introduction of standard TB therapy (2HRZE/4HR).