Appendix S1.

SUPPLEMENTARY METHODS AND RESULTS

Study population

Psoriasis subjects. To be included in the study, patients with psoriasis were required to be between 50 and 70 years of age, have a formal diagnosis of chronic plaque psoriasis confirmed by a dermatologist and have moderate-to-severe disease as defined by a Psoriasis Area and Severity Index (PASI) score of 10 or above. The lower age limit was chosen because of ethical constraints due to the potentially adverse health effects of radiation exposure. Patients were excluded if they had rheumatoid arthritis, systemic lupus erythematosus, a history of malignancies within the past 5 years (excluding localized non-melanoma skin cancer), had received topical treatment and/or ultraviolet type B phototherapy within 2 weeks or psoralen plus ultraviolet type A photochemotherapy, methotrexate, cyclosporine, acitretin or fumaric acid esters within 4 weeks. Furthermore, patients were excluded it they had received adalimumab, etanercept or infliximab within 12 weeks, ustekinumab within 24 weeks, or other immunosuppressive or anti-inflammatory agents within 5 half-lives of the active substance prior to the ^{18}F-fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT), respectively. Other exclusion criteria included infection or fever within 7 days prior to PET, severe obesity (>150 kg due to a PET/CT scanner limitation), presence of uncontrolled diabetes mellitus, coagulation defects, major surgery within the past 3 months, pregnancy or lactation, claustrophobia or a history of intravenous drug use.

Control subjects. Because of ethical constraints relating to radiation exposure in healthy individuals, control subject data were collected from patients who had concurrently or previously been examined with FDG-PET/CT for medical reasons. The control subjects were either patients with localized melanoma or patients with localized stage 1 penile cancer. Only patients who received no systemic chemotherapy and patients without metastatic disease on both initial and subsequent follow-up imaging were included (mean (standard deviation; SD) follow-up 1.4 (0.7) years). Controls were age- and sex-matched in a 1:2 ratio. The results of the FDG-PET/CT were blinded to the investigators until the cohort had been established.

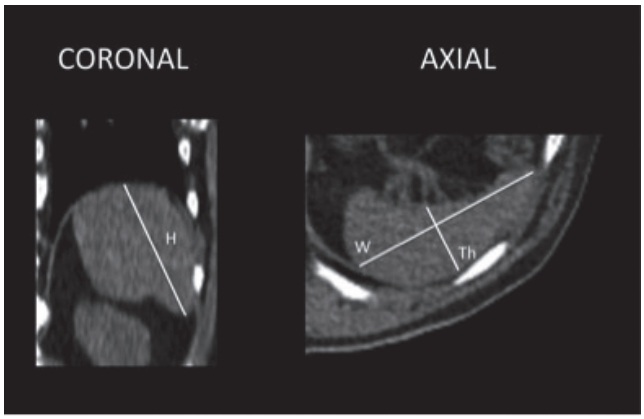
Clinical assessment

The demographic data collected included: age, sex, relevant medical history, alcohol and tobacco use, psoriasis severity, psoriasis duration and therapy, history of hypertension, diabetes and hyperlipidaemia. Clinical parameters including blood pressure, height and bodyweight were measured. Laboratory parameters including fasting blood glucose, fasting lipid panel, white blood count with differential and C-reactive protein were evaluated in a clinical hospital laboratory. PASI was assessed by a dermatologist.

PET acquisition

In patients with psoriasis, whole-body FDG-PET/CT was performed using a combined PET/CT scanner (GE Discovery 690, GE Healthcare, Chicago, IL, USA) according to institution protocols. FDG (5 MBq/kg) was administered intravenously after an overnight fast, and imaging was performed 60 min later. After unenhanced CT for attenuation correction and anatomic co-registration, PET imaging was performed with 3 min per bed position in 3-dimensional mode. Reconstruction of attenuation-corrected images was done using an ordered subset expectation maximization (OSEM) algorithm with point-spread function (PSF) and time-of-flight (3 iterations, 24 subsets, matrix size 192×192, 4 mm Gaussian post-processing filter). Control subjects were either scanned on the same GE Discovery 690 PET/CT or on a Siemens Biograph 64 PET/CT (Siemens Healthcare, Erlangen, Germany) using visually comparable PSF reconstruction protocols (TrueX) (4 iterations, 21 subsets, 3-mm Gaussian post-processing filter, matrix size 336×336). The estimated dose of radiation per patient was 9.5 mSv.

Spleen volume



SFig. 1. Assessment of spleen volume based on computed tomography images.