Real world crash injuries occur to a large and highly variable population. Analytic Morphomics measures very detailed geometry and material characteristics for tissues, organs, and bones throughout the body using automated processing of medical imaging scans. We analyzed 416 occupants involved in motor vehicle crashes with full crash investigation as well as medical imaging scans and found that morphomic data improved risk stratification for thoracic 3+ injury in both frontal and side impact crashes. We then sought to define the population distribution of the morphomic factors identified to be significantly predictive of crash injury risk to the thorax. Chest, abdomen, and pelvis CT scans were collected from 5,268 patients, aged 16 to 91 years, at the University of Michigan, who were scanned primarily for trauma indications. This curated population, named the Adult Reference Analytic Morphomics Population (RAMP), is representative of typical vehicle occupants in the United States. Customized software was used to perform automated processing of these CT scans and to store detailed body geometry and composition data in an anatomically-indexed format. Quantile regression was performed to generate curves of morphomic factors corresponding to the 5th, 25th, 50th, 75th, and 95th percentiles from ages 16-91 for both men and women respectively. This is a very detailed body composition study based on a large cohort of people.