

Inspect3D's tutorials use real data sets wherever possible in order to demonstrate realistic scenarios and avoid overly simplistic examples.

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## Load and View Data

This tutorial can be completed with any [CMZ](#) file. You can use a data set from a Visual3D Workshop at a recent ASB meeting. [V3D Workshop @ ASB](#)].

## Clean your Data

This tutorial uses overground walking data from four subjects. The subjects walked at three different speeds; slow, normal and fast. [Four Subjects Walking Data Set](#)].

## Perform Principal Component Analysis

This tutorial uses overground walking data from roughly 100 subjects divided into two conditions: normal control and osteoarthritis (moderate to severe). This data set can be found in the Demo folder of your Inspect3D installation.

## Export Results

This tutorial uses the same overground walking data set as the [Clean your Data](#) tutorial. [Four Subjects Walking Data Set](#)].

It also uses predefined queries that have been saved in a .q3d file. [AnkleAngles.q3d](#)].

## Healthy Human Walking

This tutorial explores the publicly available data set described in [A biomechanics dataset of healthy human walking at various speeds, step lengths and step widths](#) by Tim J. van der Zee, Emily M. Mundinger and Arthur D. Kuo.

The data set is available through Figshare: [Data Set](#)].

Supporting files are provided to simplify some of the data processing steps: [Supporting Files](#)].

## Treadmill Walking in Healthy Individuals

This tutorial explores Fukuchi et al.'s “gold standard” public data set of marker-based motion capture to describe [healthy individuals walking overground and on a treadmill](#).

The dataset is available through Figshare: [Data Set](#)].

Supporting files are provided to simplify some of the tutorial's steps: [Supporting Files](#)].

## OpenBiomechanics Project

These data sets are part of a [Driveline Baseball initiative](#) to provide sports biomechanics data to the general public.

### Build CMZs

This tutorial describes how to use Inspect3D's [Build CMZ](#) feature to combine [c3d files](#) and [metadata](#) into CMZ files.

This tutorial uses the OpenBiomechanics Project's Pitching Data Set: [Data Set](#)]

Supporting files are also provided: [Supporting Files](#)]

### Refine Queries with Metadata

This tutorial describes how the metadata included in CMZ files can be used the refine queries.

This tutorial uses the OpenBiomechanics Project's Hitting Data Set: [Data Set](#)]

To avoid building CMZ files from scratch, a checkpoint folder is available: [Checkpoint](#)]

## Analysis of Baseball Hitters at Different Levels of Competition

In this tutorial you will observe Inspect3Ds ability to automate the processing of large-scale data sets, and how metadata can be used to help you refine queries, while exploring OpenBiomechanics publicly available sports biomechanics data.

This tutorial uses the OpenBiomechanics Project's Hitting Data Set: [Data Set](#)

To avoid building CMZ files from scratch, a checkpoint folder is available: [Checkpoint](#)

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