# Literature Collection: HBM and Injury Prevention

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# Contents

# Chapter 1

# Introduction

## 1.1 Prerequisites

This is a *sample* book written in **Markdown**. You can use anything that Pandoc's Markdown supports, e.g., a math equation $a^2 + b^2 = c^2$.

The **bookdown** package can be installed from CRAN or Github:

```
install.packages("bookdown")
# or the development version
# devtools::install_github("rstudio/bookdown")
```

Remember each Rmd file contains one and only one chapter, and a chapter is defined by the first-level heading `#`.

To compile this example to PDF, you need XeLaTeX. You are recommended to install TinyTeX (which includes XeLaTeX): https://yihui.name/tinytex/.

# Chapter 2

# Human Body Models

# Chapter 3

# Human experiments

## 3.1 Human volunteers

## 3.2 Post-mortem human subjects (PMHS)

# Chapter 4

# Head Injuries

We describe our methods in this chapter.

# Chapter 5

# Spine Injuries

## 5.1 Cervical Spine

## 5.2 Thoracic Spine

## 5.3 Lumbar Spine

Lumbar spine injuries in frontal collision

- Burst fractures of the lumbar spine in frontal crashes (Kaufman et al., 2013)
- Thoracolumbar Spine Fractures in Frontal Impact Crashes (Pintar et al., 2012)

# Chapter 6

# Shoulder and Upper Extremity Injuries

We describe our methods in this chapter.

## 6.1 Shoulder injuries

## 6.2 Upper Extremity Injuries

# Chapter 7

# Thoracic Injuries

Some *significant* applications are demonstrated in this chapter.

## 7.1 Rib injuries

- Detailed subject-specific FE rib modeling for fracture prediction [Iraeus2019]
- GHBMC M50-O:Evaluation of Skeletal and Soft Tissue Contributions to Thoracic Response, Dynamic Frontal Loading Scenarios [Ramachandra2019]
  - Experimental data: [Murach2018]

## 7.2 Soft tissue injuries

# Chapter 8

# Abdomen and Pelvis Injuries

Some *significant* applications are demonstrated in this chapter.

## 8.1 Abdomen

## 8.2 Pelvis

# Chapter 9

# Lower Extremities

# Chapter 10

# Other resources

# Bibliography

Kaufman, R. P., Ching, R. P., Willis, M. M., Mack, C. D., Gross, J. A., and Bulger, E. M. (2013). Burst fractures of the lumbar spine in frontal crashes. *Accident Analysis & Prevention*, 59:153–163.

Pintar, F. A., Yoganandan, N., Maiman, D. J., Scarboro, M., and Rudd, R. W. (2012). Thoracolumbar spine fractures in frontal impact crashes. *Annals of advances in automotive medicine. Association for the Advancement of Automotive Medicine. Annual Scientific Conference*, 56:277–283.