# Introduction

The pill slicer is an easy to use device that slices a pill into two. This device is intended for users that need to cut pills into two and have difficulty doing so without crushing the pill.

# Research

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Image | Price | Link |
| Commercial | | | |
| EZY DOSE Pill Cutter | Image of the EZY DOSE Pill Cutter | 12.25 | [Link](https://www.amazon.ca/Ezy-Dose-Pill-Cutter-Dispenser/dp/B001KYVO78/ref=asc_df_B001KYVO78/?tag=googleshopc0c-20&linkCode=df0&hvadid=459657913388&hvpos=&hvnetw=g&hvrand=11136744685591316674&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9001594&hvtargid=pla-817654523180&th=1) |
| Pill Cutter | Image of the Pill Cutter | 8.99 | [Link](https://www.amazon.ca/Pill-Splitters-Portable-Vitamins-Medication/dp/B09TZSBPQC/ref=sr_1_10?crid=18OUBCBGM3QK2&keywords=pill+cutter&qid=1679440427&s=hpc&sprefix=pill+cutter%2Chpc%2C160&sr=1-10) |
| DIY | | | |
| DIY Multiple Pill Splitter | A knife bolted to a metal bracket on several pieces of wood. | N/A | [Link](https://www.instructables.com/DIY-Multiple-Pill-Splitter/) |
| Homemade Pill Splitter | A crushed pill on a cutting board between two hands. One hand is holding a homemade pill splitter. | N/A | [Link](https://www.wpr.org/homemade-pill-splitter) |

# Requirements

## Goals

|  |  |
| --- | --- |
| G01 | Device must be able to easily slice a pill |

## Functional Requirements

|  |  |
| --- | --- |
| F01 | Device must use a replaceable slicing device |
| F02 | Device must be safe and difficult to injure yourself with. |

## Constraints

|  |  |
| --- | --- |
| C01 | Design must be entirely 3D printed |

# Conceptual Design

Initial design was found on myminifactory.com by user [Aliaksei Petsiuk @apetsiuk - MyMiniFactory](https://www.myminifactory.com/users/apetsiuk)

# Prototyping

After inspecting the files for the first version, it was found that there was no blade or method of slicing the pill mentioned in the original device posting. A version was designed that uses a standard disposable safety razor blade.

# Testing

After the first print of the updated design, it was found that the overhangs were too steep for most printers, leading to poor surface quality.

# Detailed Design

A final version was designed with better overhangs that are more printable and reduced print time by an hour.

# Opportunities for Improvement

More safety features could be added in addition to the blade fence to improve the safety of the device.