

# RoboCupJunior Rescue Line

## Weighted Victims Definition and Build Guide

### Introduction

Dear RoboCuppers, as a part of the 2024 rule changes, we re-clarified victims to be spheres with an off-center of mass.

**2.10.2. A victim represents a person and is in the form of a 4-5 cm diameter sphere with an off-center center of mass and a maximum weight of 80 g.**

This change was made as a response to observations from recent competitions, where victims would roll out of the evacuation zone upon minor contact with a robot. We find this problematic, as teams miss out on a lot of points due to “bad luck”. However, we wanted to retain the spherical shape of the victims, to retain some variance, as well as keep the simplicity of, e.g. picking victims up and constructing a compartment for carrying multiple victims to the evacuation point at the same time. This is why we came up with the idea of offsetting the center of mass of the victims. As a follow-up on this change, we are publishing this short guide on an exemplary simple construction of such a victim.

**Keep in mind that this is not a rule that has to be followed, there are many ways to achieve the final result, this is just a suggestion that can be easily executed from easily obtainable materials!**

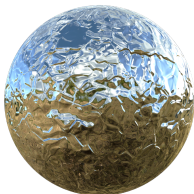
### Guide



We recommend making the victims from table tennis balls. They can be bought from multiple stores and should be available to all RoboCup participants. However, even though the standard table tennis ball diameter is 40 mm, the old ones (with a diameter of 38 mm) are still sold. Take this into consideration to fulfill the diameter of the victim rule.



Next, either cut the ball in half or drill a hole. Then fill it up with e.g. sand or rice. Do not fill the ball completely, less than around  $\frac{1}{3}$  of the ball should be fine. This is the weight that will keep the ball from rolling around uncontrollably. Tape the ball back up after this.



Finally, wrap the ball in either aluminum foil or black tape, to create live and dead victims. These materials will also slightly increase the diameter of the ball, but since we began with 40 mm, there is a lot of free space for it!



And there you have it, you have successfully made the victims and can start attempting to rescue them! We wish you the best of luck!