Table 1: Skincells Dataset

day	time	logcells
1	0.0	7.392317
1	0.0	9.679480
1	0.0	9.509775
1	0.0	12.158925
1	0.0	9.473706
1	0.5	5.087463

```
#set this file directory as current path
current_path = rstudioapi::getActiveDocumentContext()$path
setwd(dirname(current_path))
```

```
#Install kable extra to render tables
#install.packages("kableExtra")
library(kableExtra)
#read skincells csv file into a list in R and show basic
skincells=read.csv("skincells.csv",header=T)
#show first lines of skincells table
head(skincells) %>%
  kbl(caption = "Skincells Dataset") %>%
  kable_styling()
```

```
attach(skincells)
# applies t-test function on each logcell entries using time as indices
cells_by_time_data=by(logcells,factor(time),t.test)
# gets all time durations in an a list to use later to build final dataframe
different_time_durations <- names(cells_by_time_data)
# reorganizes cells_by_time list into a matrix getting only the mean[4] and confidence interval[5] from
cells_by_time_data=matrix(c(
  unlist(cells_by_time_data$`0`[5:4]),
  unlist(cells_by_time_data$`0.5`[5:4]),
  unlist (cells_by_time_data$`1`[5:4]),
  unlist (cells_by_time_data$`1.5`[5:4]),
  unlist (cells_by_time_data$`2`[5:4]),
  unlist (cells_by_time_data$`2.5`[5:4]),
  unlist (cells_by_time_data$`3`[5:4]),
  unlist (cells_by_time_data$`3.5`[5:4])),nrow=8,ncol=3,byrow=T)
cells_by_time_data=data.frame(cbind(cells_by_time_data,different_time_durations))
colnames(cells_by_time_data)=c('mean','Lower 95% CL','Upper 95% CL','Time')
cells_by_time_data %>%
  kbl(caption = "Mean Cells \\& 95\\% CI by radiation time.") %>%
  kable_styling()
```

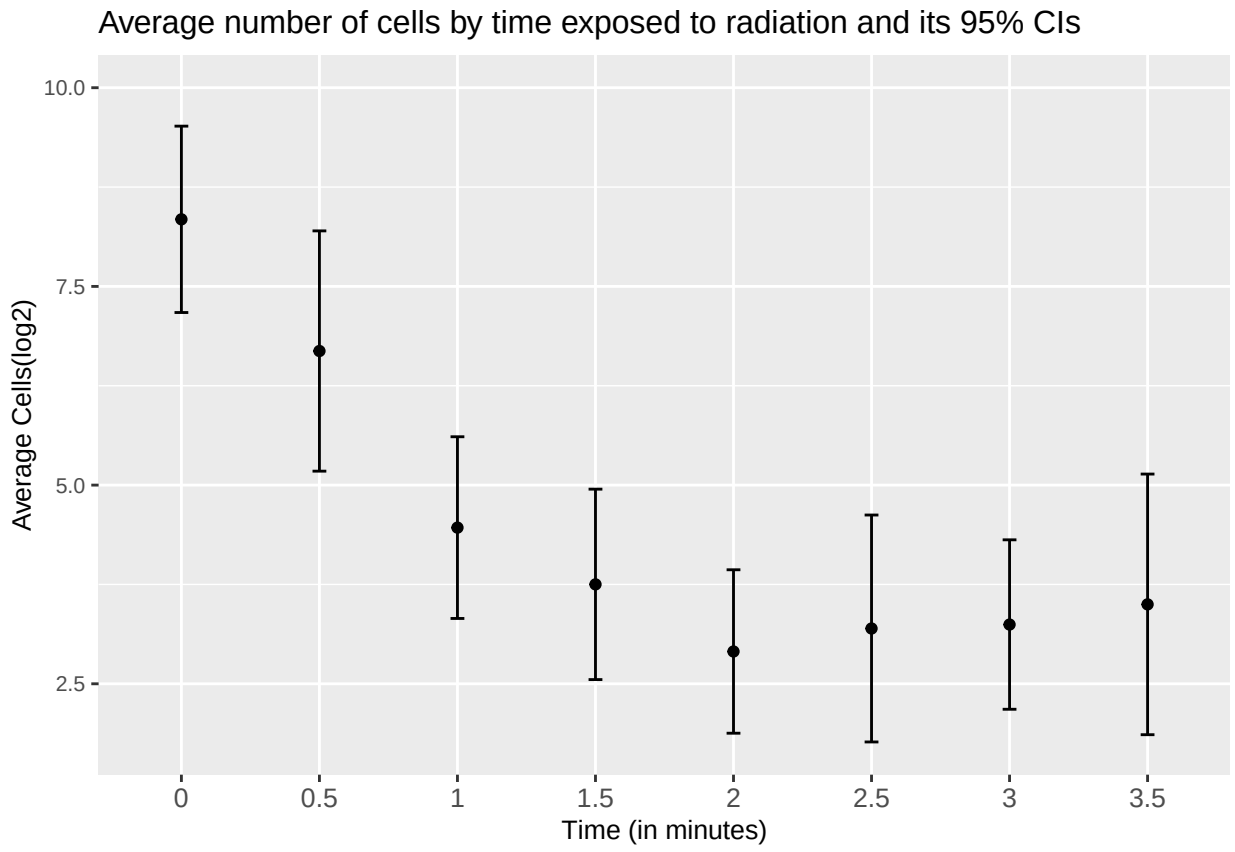
```
#takes out a few decimal places to show a mor ecleared chart
cells_by_time_data$mean <- as.numeric(cells_by_time_data$mean)
cells_by_time_data$`Lower 95% CL` <- as.numeric(cells_by_time_data$`Lower 95% CL`)
cells_by_time_data$`Upper 95% CL` <- as.numeric(cells_by_time_data$`Upper 95% CL`)
#install.packages('ggplot2')
```

Table 2: Mean Cells & 95% CI by radiation time.

mean	Lower 95% CL	Upper 95% CL	Time
8.34394760067241	7.17149382926171	9.51640137208311	0
6.6870789730299	5.17549369881235	8.19866424724746	0.5
4.46508006691391	3.32200335531815	5.60815677850967	1
3.75102183660247	2.55303743771531	4.94900623548963	1.5
2.90636086213929	1.87809037927404	3.93463134500454	2
3.19578638443722	1.76804170136727	4.62353106750718	2.5
3.24546036615271	2.1796040601913	4.31131667211413	3
3.49927413642014	1.85950819781512	5.13904007502516	3.5

```
library(ggplot2)
# plots the average number of cells together with it's 95% conf interval agains time exposed to radiati
ggplot(cells_by_time_data, aes(x=Time,y=cells_by_time_data[,1])) +
 geom_errorbar(aes(ymin=`Lower 95% CL`, ymax=`Upper 95% CL`), width=.1) +
 geom_line() + geom_point() +expand_limits(y=c(5,10))+ylab("Average Cells(log2)")+xlab ('Time (in minut
```

```
## geom_path: Each group consists of only one observation. Do you need to adjust
## the group aesthetic?
```



```
detach(skincells)
```