

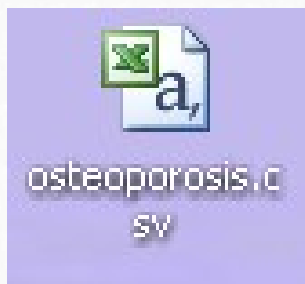
# Practical exercises with R-commander

Curs d'Estadística Bàsica per a la Recerca Biomèdica

UEB – VHIR - GRBIO

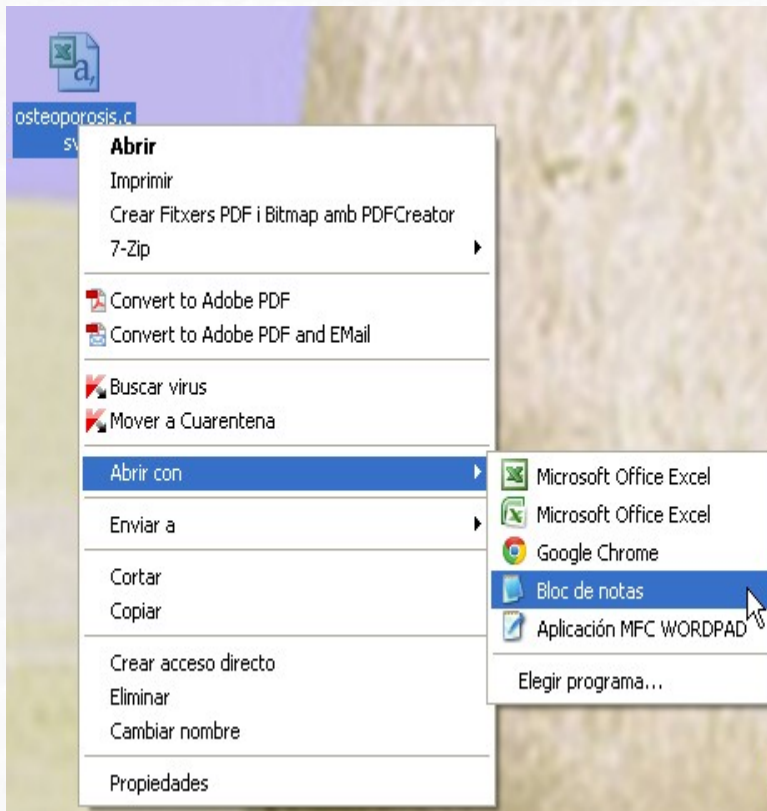
We have to load into Rcommander the dataset *osteoporosis.csv*

1. “.csv” -> “comma separated values” but could be separated with \tab, spaces, ; , ....
2. First of all “look” the file with a file viewer like “wordpad”, “bloc de notas”,...



# Practice. Loading data sets

We have to load into Rcommander the dataset *osteoporosis.csv*



A screenshot of a Notepad window titled 'osteoporosis.csv - Bloc de notas'. The window displays the first few lines of a CSV file. A red arrow points to the 'f\_mic' column header. The data is as follows:

"registro"	"area"	"f_mic"	"edad"	"grupedad"	"peso"	"talla"
8	"OSTEOPENIA"	14	99	"NO"	"NO MENOPAUSIA/NO CONSTA"	"NORMAL"
55	"55 - 59"	75	161	28,93	92	"5 - 54"
"SI"	"NATURAL"	"PRIMARIOS"	45	10	11	29651200
NDARIOS"	57	10	11483164800	52	"5 - 54"	60
5	159	22,74	61	"OSTEOPENIA"	14	46
ORMAL"	13	99	"NO"	"NO MENOPAUSIA/NO CONSTA"	"PRIMARI"	
10	11730873600	45	"45 - 49"	46,5	160	18,16
NSTA"	"SECUNDARIOS"	104	11	11516083200	51	"50 - 54"
5	13	11226902400	61	"60 - 64"	75	161
21,41	68	"OSTEOPENIA"	13	44	"SI"	"NATURAL"
14	48	"SI"	"NATURAL"	"PRIMARIOS"	136	13
24,8	61	"OSTEOPENIA"	11	43	"SI"	"NATURAL"
POROSIS"	12	50	"SI"	"NATURAL"	"PRIMARIOS"	163
0	63	"60 - 64"	85,5	153	36,52	60
59"	57	170	19,72	90	"NORMAL"	16
1,98	67	"OSTEOPENIA"	11	99	"NO"	"NO MENOPAUSIA/N"
153	40,8	53	"OSTEOPENIA"	13	53	"SI"
OPENIA"	12	52	"SI"	"NATURAL"	"PRIMARIOS"	215
129600	55	"55 - 59"	67	151	29,38	80
"SI"	"NATURAL"	"PRIMARIOS"	236	13	11273644800	59
ZAR"	246	13	11388729600	56	"55 - 59"	62,5
N FINALIZAR"	256	13	10943510400	69	"65 - 69"	57,2
"60 - 64"	79	158	31,65	69	"OSTEOPENIA"	13
1,85	111	"NORMAL"	13	49	"SI"	"NATURAL"
7	154	24,03	51	"OSTEOPENIA"	12	47
NATURAL"	"SIN ESTUDIOS"	297	10	11730355200	45	
"OSTEOPENIA"	11	48	"SI"	"NATURAL"	"PRIMARIOS"	307
O MENOPAUSIA/NO CONSTA"	"PRIMARIOS"	317	10	11577513600	50	
63	"OSTEOPENIA"	14	51	"SI"	"NATURAL"	"SECUNDA"
49	"SI"	"NATURAL"	"PRIMARIOS"	337	13	11824272000
"	"PRIMARIOS"	347	13	11569132800	50	"50 - 54"
600	54	"50 - 54"	77	159	30,46	64
00	63	"60 - 64"	83	156	34,11	66

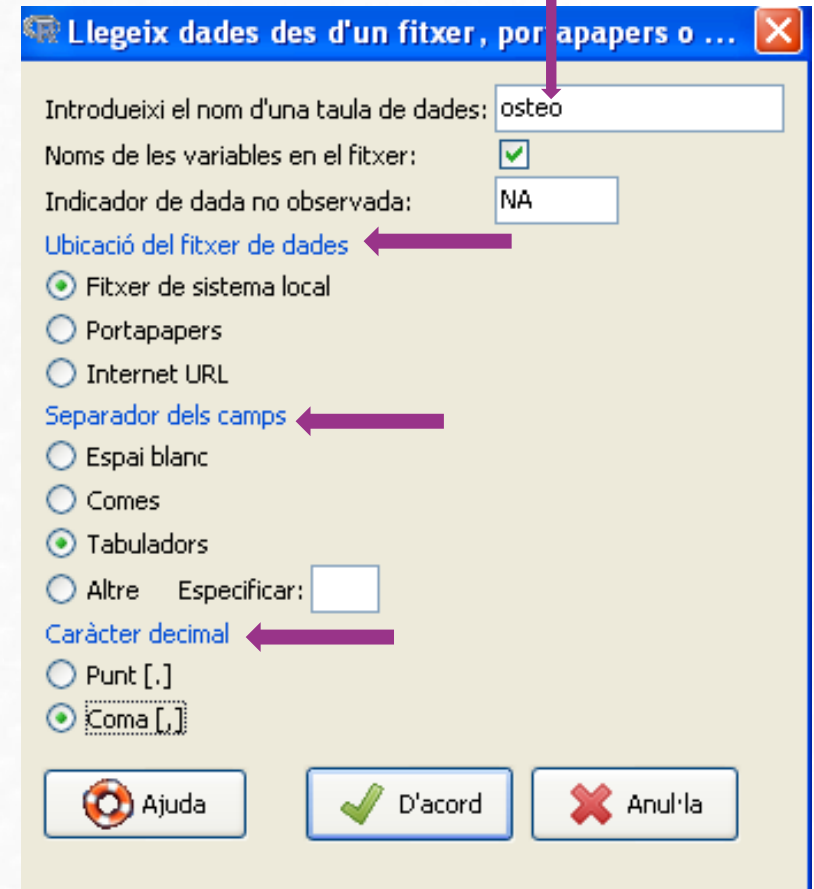
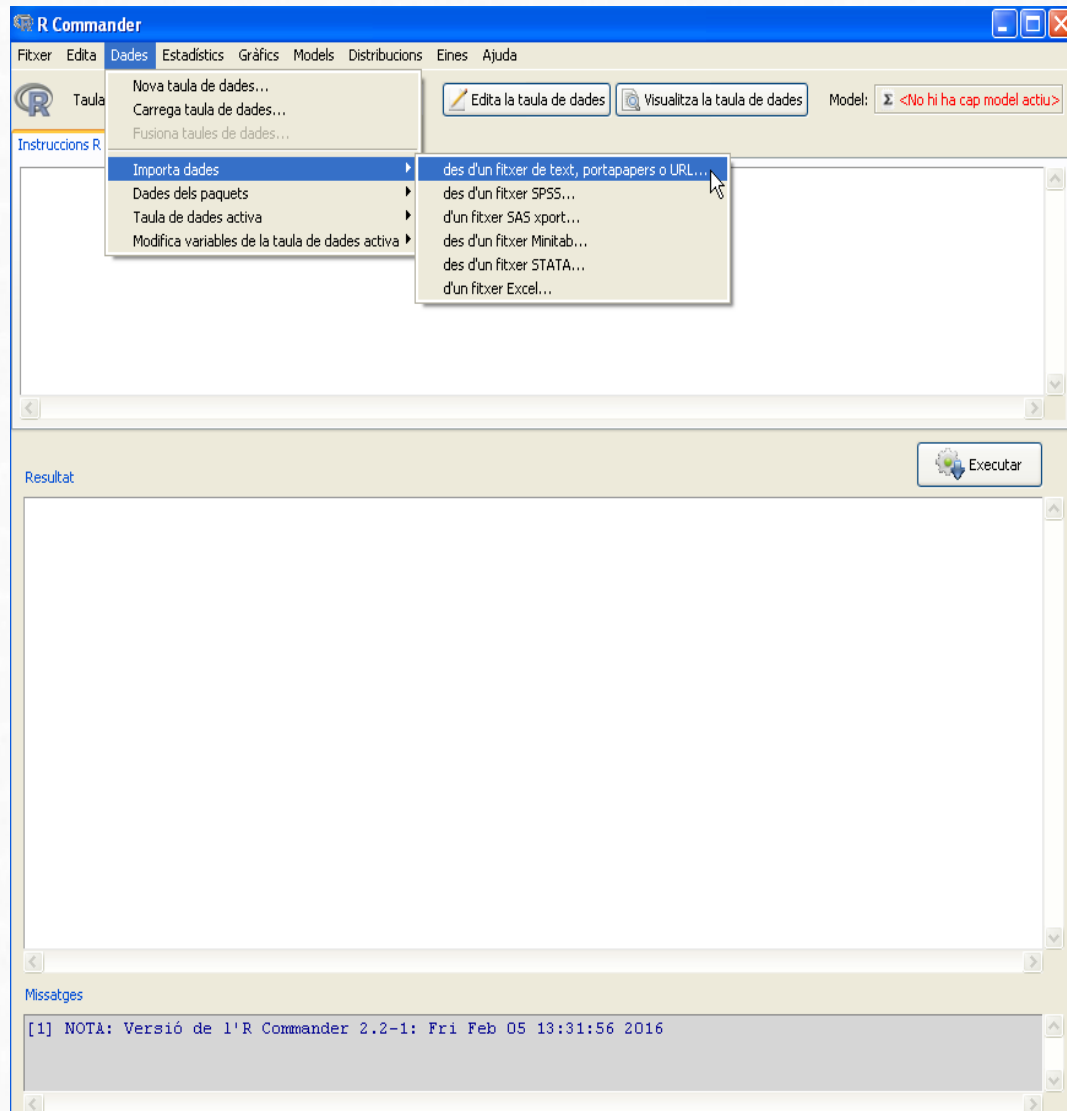
We have to load into Rcommander the dataset *osteoporosis.csv*

1. “.csv” -> “comma separated values” but could be separated with \tab, spaces, ; , ....
2. First of all “look” the file with a file viewer like “wordpad”, “bloc de notas”,...
3. Once we know how:
  1. the data is separated
  2. the decimals are separated
4. we can open with Rcmdr



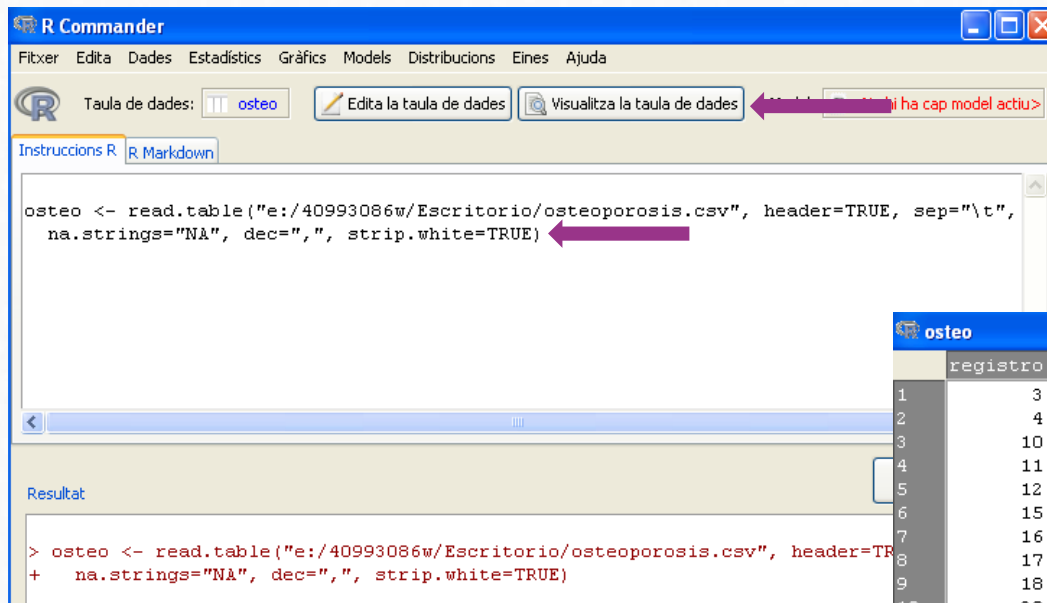
# Practice. Loading data sets

We have to import into Rcommander the dataset *osteoporosis.csv*

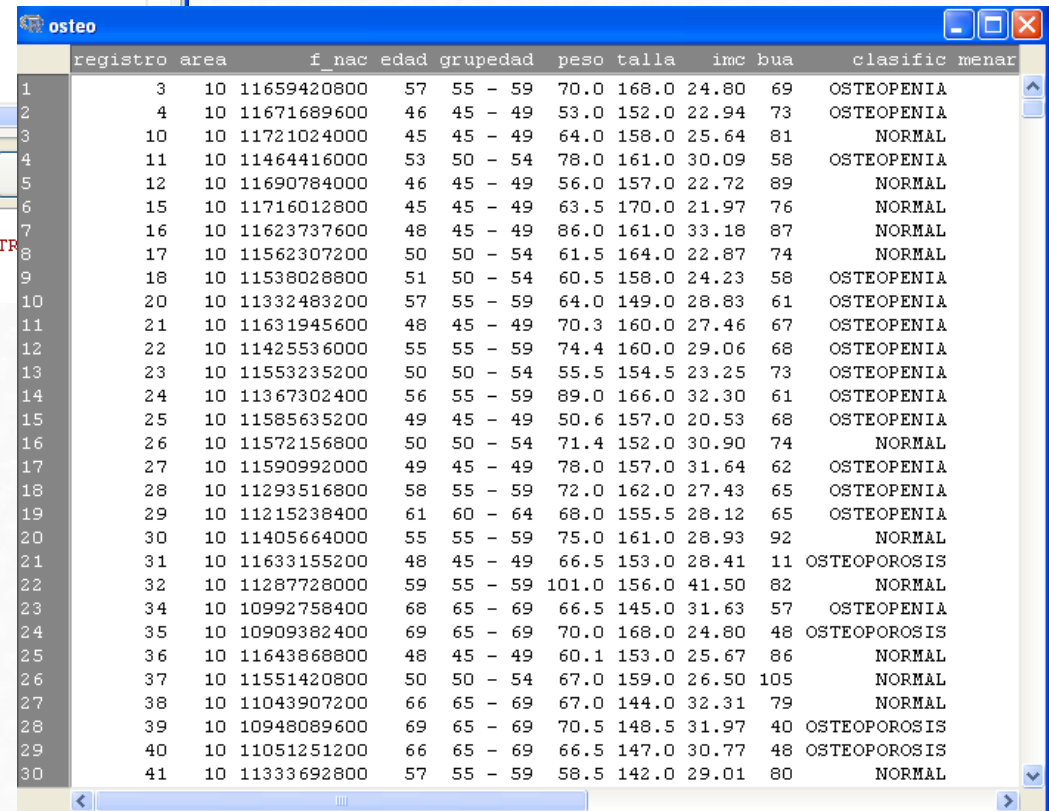


# Practice. Loading data sets

We have to import into Rcommander the dataset *osteoporosis.csv*



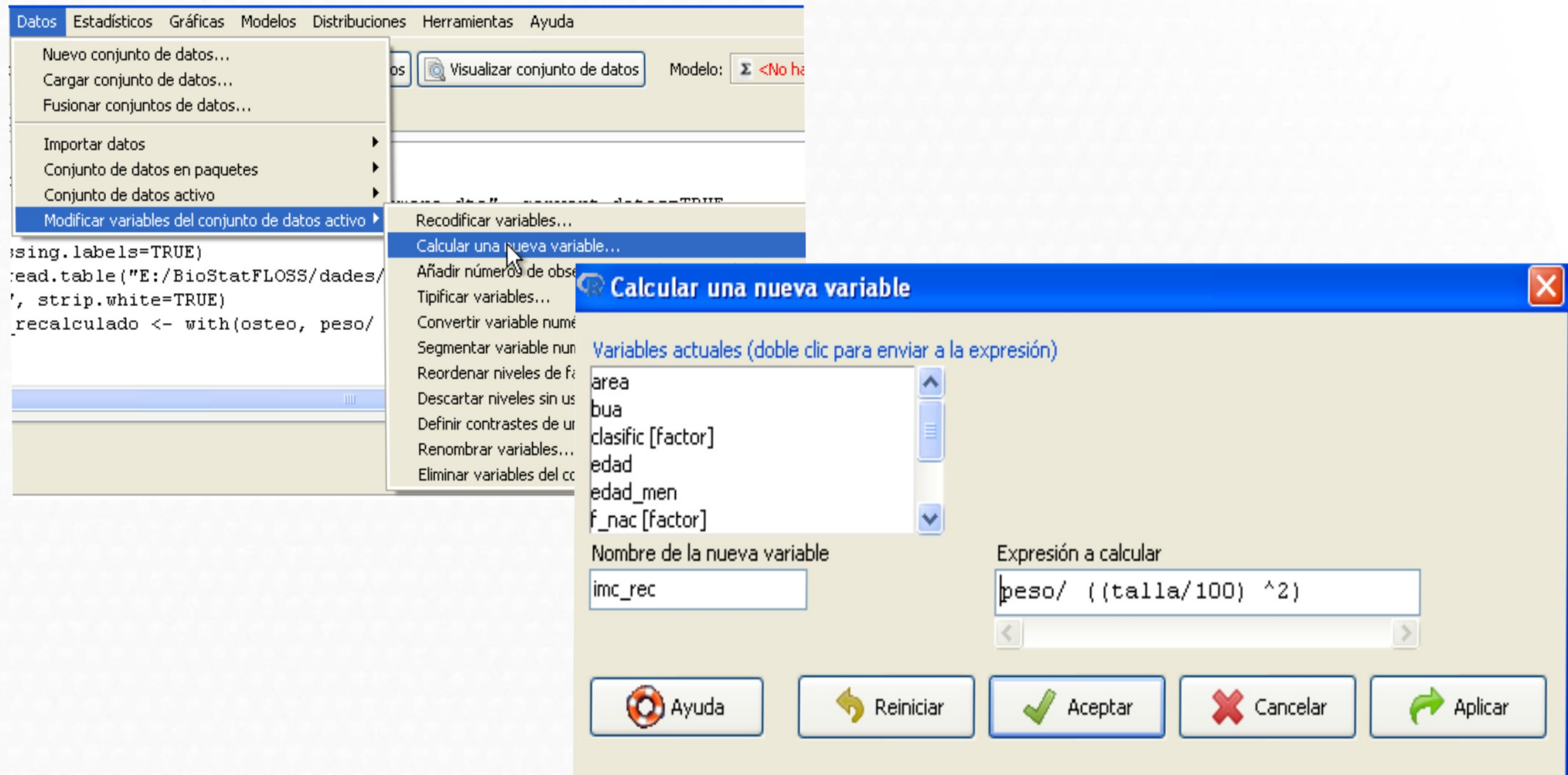
```
osteoporosis <- read.table("e:/40993086w/Escritorio/osteoporosis.csv", header=TRUE, sep=";", as.is=TRUE, na.strings="NA", dec=".", strip.white=TRUE)
```



	registro	area	f_nac	edad	grupedad	peso	talla	imc	bua	clasific	menar
1	3	10	11659420800	57	55 - 59	70.0	168.0	24.80	69	OSTEOPENIA	
2	4	10	11671689600	46	45 - 49	53.0	152.0	22.94	73	OSTEOPENIA	
3	10	10	11721024000	45	45 - 49	64.0	158.0	25.64	81	NORMAL	
4	11	10	11464416000	53	50 - 54	78.0	161.0	30.09	58	OSTEOPENIA	
5	12	10	11690784000	46	45 - 49	56.0	157.0	22.72	89	NORMAL	
6	15	10	11716012800	45	45 - 49	63.5	170.0	21.97	76	NORMAL	
7	16	10	11623737600	48	45 - 49	86.0	161.0	33.18	87	NORMAL	
8	17	10	11562307200	50	50 - 54	61.5	164.0	22.87	74	NORMAL	
9	18	10	11538028800	51	50 - 54	60.5	158.0	24.23	58	OSTEOPENIA	
10	20	10	11332483200	57	55 - 59	64.0	149.0	28.83	61	OSTEOPENIA	
11	21	10	11631945600	48	45 - 49	70.3	160.0	27.46	67	OSTEOPENIA	
12	22	10	11425536000	55	55 - 59	74.4	160.0	29.06	68	OSTEOPENIA	
13	23	10	11553235200	50	50 - 54	55.5	154.5	23.25	73	OSTEOPENIA	
14	24	10	11367302400	56	55 - 59	89.0	166.0	32.30	61	OSTEOPENIA	
15	25	10	11585635200	49	45 - 49	50.6	157.0	20.53	68	OSTEOPENIA	
16	26	10	11572156800	50	50 - 54	71.4	152.0	30.90	74	NORMAL	
17	27	10	11590992000	49	45 - 49	78.0	157.0	31.64	62	OSTEOPENIA	
18	28	10	11293516800	58	55 - 59	72.0	162.0	27.43	65	OSTEOPENIA	
19	29	10	11215238400	61	60 - 64	68.0	155.5	28.12	65	OSTEOPENIA	
20	30	10	11405664000	55	55 - 59	75.0	161.0	28.93	92	NORMAL	
21	31	10	11633155200	48	45 - 49	66.5	153.0	28.41	11	OSTEOPOROSIS	
22	32	10	11287728000	59	55 - 59	101.0	156.0	41.50	82	NORMAL	
23	34	10	10992758400	68	65 - 69	66.5	145.0	31.63	57	OSTEOPENIA	
24	35	10	10909382400	69	65 - 69	70.0	168.0	24.80	48	OSTEOPOROSIS	
25	36	10	11643868800	48	45 - 49	60.1	153.0	25.67	86	NORMAL	
26	37	10	11551420800	50	50 - 54	67.0	159.0	26.50	105	NORMAL	
27	38	10	11043907200	66	65 - 69	67.0	144.0	32.31	79	NORMAL	
28	39	10	10948089600	69	65 - 69	70.5	148.5	31.97	40	OSTEOPOROSIS	
29	40	10	11051251200	66	65 - 69	66.5	147.0	30.77	48	OSTEOPOROSIS	
30	41	10	11333692800	57	55 - 59	58.5	142.0	29.01	80	NORMAL	

# Practice. Adding variables to the data set

We have to add new variables to the dataset *osteoporosis.csv*



The screenshot shows the SPSS 'Calcular una nueva variable' (Calculate New Variable) dialog box. The 'Variables actuales' (Current Variables) list on the left contains: area, bua, clasific [factor], edad, edad\_men, f\_nac [factor], and f\_nac. The 'Nombre de la nueva variable' (Name of the new variable) field is set to 'imc\_rec'. The 'Expresión a calcular' (Expression to calculate) field contains the formula:  $\text{peso} / ((\text{talla} / 100)^2)$ . The dialog box has buttons for 'Ayuda' (Help), 'Reiniciar' (Reset), 'Aceptar' (OK), 'Cancelar' (Cancel), and 'Aplicar' (Apply).

SPSS Menu: Datos, Estadísticos, Gráficas, Modelos, Distribuciones, Herramientas, Ayuda

SPSS Menu: Nuevo conjunto de datos..., Cargar conjunto de datos..., Fusionar conjuntos de datos..., Importar datos, Conjunto de datos en paquetes, Conjunto de datos activo, Modificar variables del conjunto de datos activo

SPSS Menu: Recodificar variables..., Calcular una nueva variable..., Añadir números de observación, Tipificar variables..., Convertir variable numérica, Segmentar variable numérica, Reordenar niveles de factor, Descartar niveles sin usar, Definir contrastes de usuario, Renombrar variables..., Eliminar variables del conjunto de datos activo

SPSS Command Window:

```
using.labels=TRUE)  
read.table("E:/BioStatFLOSS/dades/  
, strip.white=TRUE)  
_recalculado <- with(osteo, peso/
```

Calcular una nueva variable

Variables actuales (doble clic para enviar a la expresión)

area  
bua  
clasific [factor]  
edad  
edad\_men  
f\_nac [factor]

Nombre de la nueva variable

imc\_rec

Expresión a calcular

$\text{peso} / ((\text{talla} / 100)^2)$

Ayuda Reiniciar Aceptar Cancelar Aplicar

# Practice. Loading data sets

We have to import into Rcommander the dataset *hta.xls*

The screenshot shows the R Commander application window. The 'Dades' menu is open, and the 'Importa dades' option is selected, which has opened a sub-menu. In this sub-menu, the option 'd'un fitxer Excel...' is highlighted by the mouse. Below the main window, a dialog box titled 'Importa una taula de dades Excel' is open. This dialog box contains a text field for the dataset name, which is 'hta'. There are three checked options: 'Noms de les variables en la primera filera del full de càlcul', 'Noms de les fileres a la primera columna del full de càlcul', and 'Converteix caràcters a factors'. The 'Indicador de dada no observada' field is set to '<cel·la buida>'. At the bottom of the dialog box, there are three buttons: 'Ajuda', 'D'acord', and 'Anul·la'.

R Commander

Fitxer Editar Dades Estadístics Gràfics Models Distribucions Eines Ajuda

Nova taula de dades...  
Carrega taula de dades...  
Fusiona taules de dades...  
Visualitza la taula de dades

Model:  $\Sigma$  <No hi ha cap model actiu>

Importa dades  
Dades dels paquets  
Taula de dades activa  
Modifica variables de la taula de dades activa

des d'un fitxer de text, portapapers o URL...  
des d'un fitxer SPSS...  
d'un fitxer SAS xport...  
des d'un fitxer Minitab...  
des d'un fitxer STATA...  
d'un fitxer Excel...

osteo <-  
na.str:  
library(  
showData(osteo, placement='-20+200', fon  
maxheight=30)

Resultat

Importa una taula de dades Excel

Entri el nom d'una taula de dades: hta

☒ Noms de les variables en la primera filera del full de càlcul  
☐ Noms de les fileres a la primera columna del full de càlcul  
☒ Converteix caràcters a factors

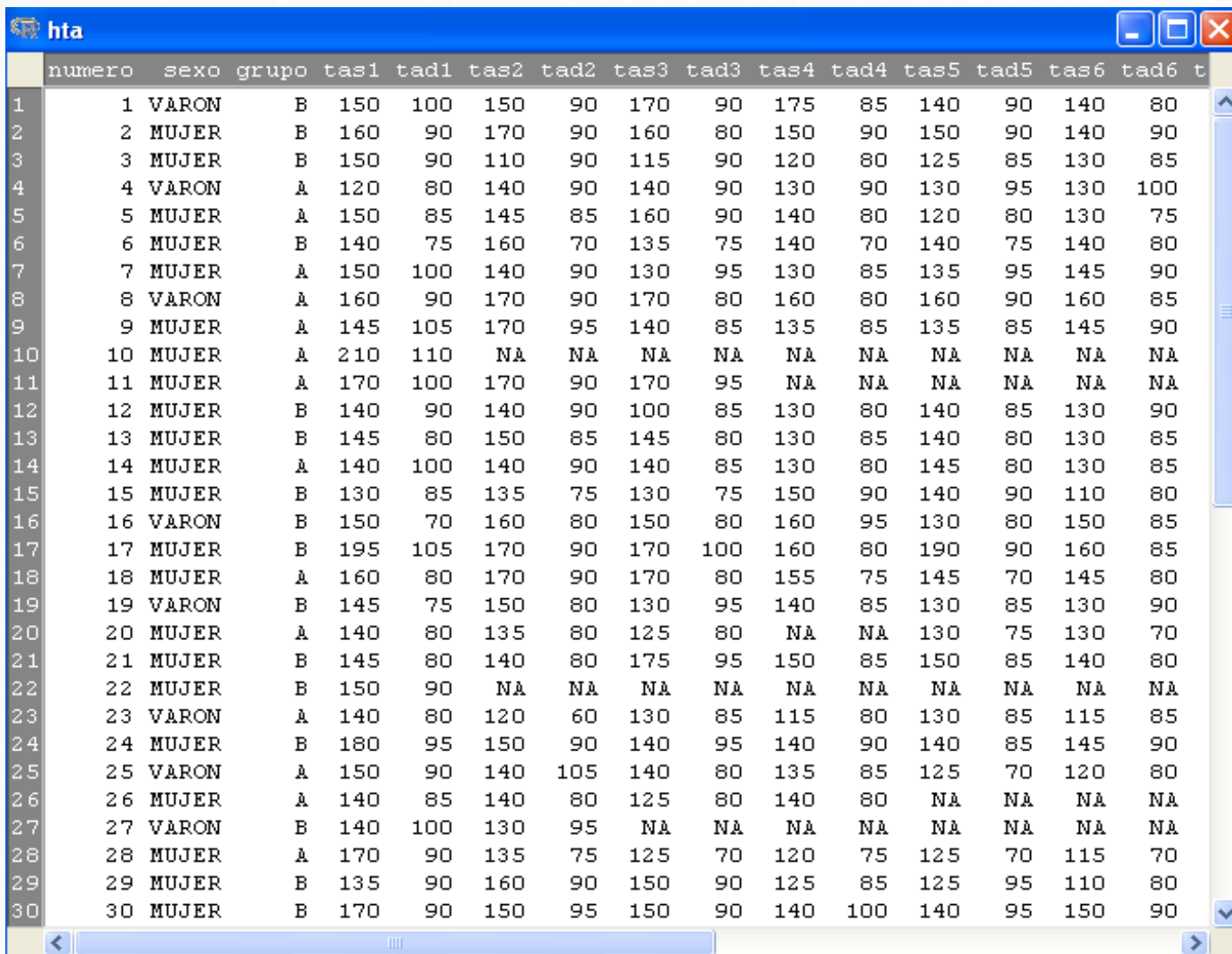
Indicador de dada no observada: <cel·la buida>

Ajuda D'acord Anul·la



# Practice. Loading data sets

We have to import into Rcommander the dataset *hta.xls*



	numero	sexo	grupo	tas1	tad1	tas2	tad2	tas3	tad3	tas4	tad4	tas5	tad5	tas6	tad6	t
1	1	VARON	B	150	100	150	90	170	90	175	85	140	90	140	80	
2	2	MUJER	B	160	90	170	90	160	80	150	90	150	90	140	90	
3	3	MUJER	B	150	90	110	90	115	90	120	80	125	85	130	85	
4	4	VARON	A	120	80	140	90	140	90	130	90	130	95	130	100	
5	5	MUJER	A	150	85	145	85	160	90	140	80	120	80	130	75	
6	6	MUJER	B	140	75	160	70	135	75	140	70	140	75	140	80	
7	7	MUJER	A	150	100	140	90	130	95	130	85	135	95	145	90	
8	8	VARON	A	160	90	170	90	170	80	160	80	160	90	160	85	
9	9	MUJER	A	145	105	170	95	140	85	135	85	135	85	145	90	
10	10	MUJER	A	210	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
11	11	MUJER	A	170	100	170	90	170	95	NA	NA	NA	NA	NA	NA	
12	12	MUJER	B	140	90	140	90	100	85	130	80	140	85	130	90	
13	13	MUJER	B	145	80	150	85	145	80	130	85	140	80	130	85	
14	14	MUJER	A	140	100	140	90	140	85	130	80	145	80	130	85	
15	15	MUJER	B	130	85	135	75	130	75	150	90	140	90	110	80	
16	16	VARON	B	150	70	160	80	150	80	160	95	130	80	150	85	
17	17	MUJER	B	195	105	170	90	170	100	160	80	190	90	160	85	
18	18	MUJER	A	160	80	170	90	170	80	155	75	145	70	145	80	
19	19	VARON	B	145	75	150	80	130	95	140	85	130	85	130	90	
20	20	MUJER	A	140	80	135	80	125	80	NA	NA	130	75	130	70	
21	21	MUJER	B	145	80	140	80	175	95	150	85	150	85	140	80	
22	22	MUJER	B	150	90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
23	23	VARON	A	140	80	120	60	130	85	115	80	130	85	115	85	
24	24	MUJER	B	180	95	150	90	140	95	140	90	140	85	145	90	
25	25	VARON	A	150	90	140	105	140	80	135	85	125	70	120	80	
26	26	MUJER	A	140	85	140	80	125	80	140	80	NA	NA	NA	NA	
27	27	VARON	B	140	100	130	95	NA	NA	NA	NA	NA	NA	NA	NA	
28	28	MUJER	A	170	90	135	75	125	70	120	75	125	70	115	70	
29	29	MUJER	B	135	90	160	90	150	90	125	85	125	95	110	80	
30	30	MUJER	B	170	90	150	95	150	90	140	100	140	95	150	90	

# Practice. Adding variables to the data set

We have to add variables *age* and *weight* the dataset *hta.xls*

The image shows the R Commander interface with the 'hta' dataset loaded. The 'Editor de dades: hta' window is open, displaying a table with 28 rows and 9 columns. A red arrow points to the 'Afegeix una columna' button in the top-left corner of the editor window.

**R Commander Console:**

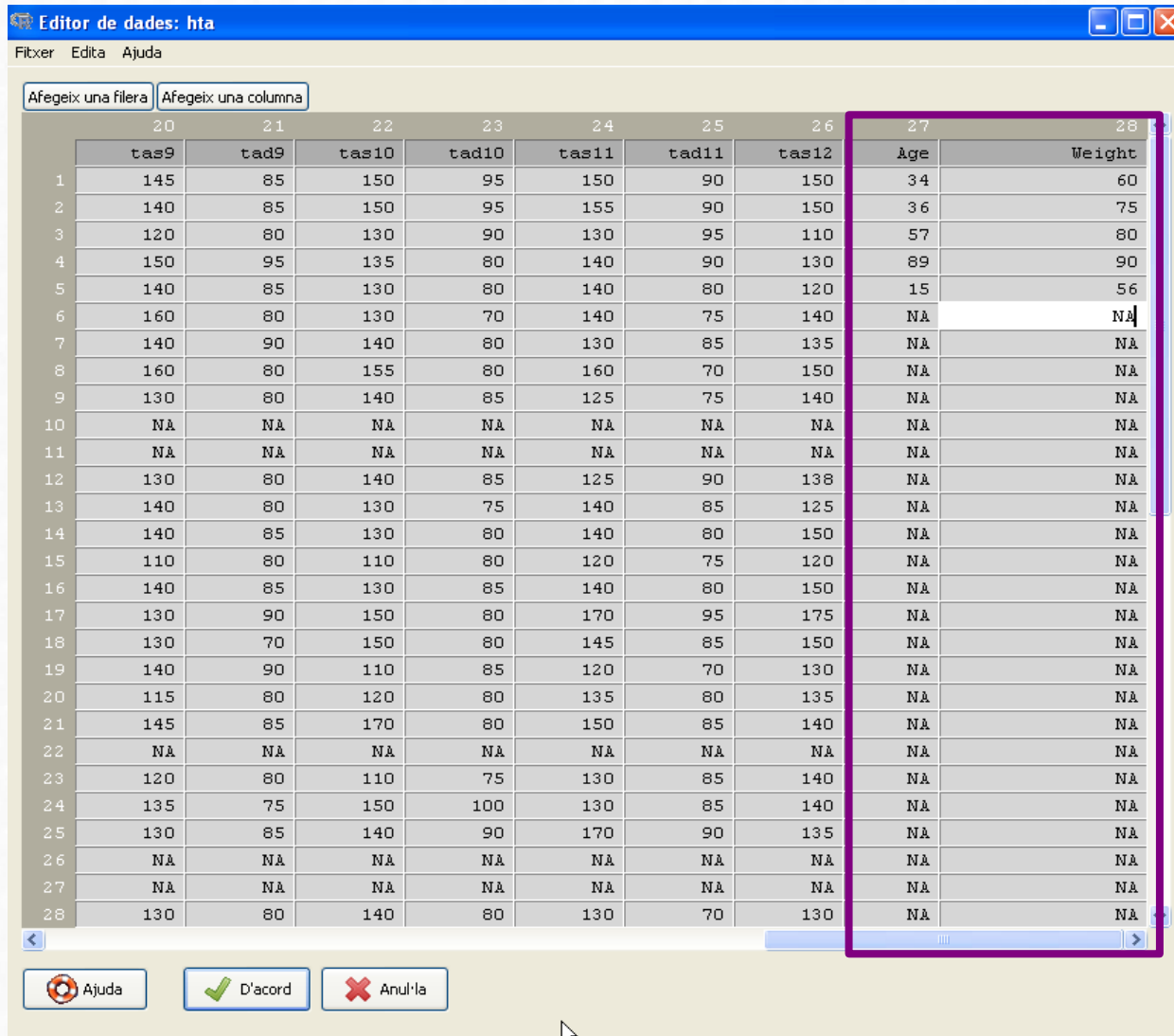
```
showData(hta, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
maxheight=30)
showData(hta, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
maxheight=30)
editDataset(hta)
names(hta)
AggregatedData<- aggregate(tad1 ~ grupo, data=hta, FUN=mean)
showData(AggregatedData, placement='-20+200', font=getRcmdr('logFont'), ma
maxheight=30)
```

**Editor de dades: hta Table:**

rowname	numero	sexo	grupo	tas1	tad1	tas2	tad2	tas3	tad3
1	1	VARON	B	150	100	150	90	170	90
2	2	MUJER	B	160	90	170	90	160	80
3	3	MUJER	B	150	90	110	90	115	90
4	4	VARON	A	120	80	140	90	140	90
5	5	MUJER	A	150	85	145	85	160	90
6	6	MUJER	B	140	75	160	70	135	75
7	7	MUJER	A	150	100	140	90	130	95
8	8	VARON	A	160	90	170	90	170	80
9	9	MUJER	A	145	105	170	95	140	85
10	10	MUJER	A	210	110	NA	NA	NA	NA
11	11	MUJER	A	170	100	170	90	170	95
12	12	MUJER	B	140	90	140	90	100	85
13	13	MUJER	B	145	80	150	85	145	80
14	14	MUJER	A	140	100	140	90	140	85
15	15	MUJER	B	130	85	135	75	130	75
16	16	VARON	B	150	70	160	80	150	80
17	17	MUJER	B	195	105	170	90	170	100
18	18	MUJER	A	160	80	170	90	170	80
19	19	VARON	B	145	75	150	80	130	95
20	20	MUJER	A	140	80	135	80	125	80
21	21	MUJER	B	145	80	140	80	175	95
22	22	MUJER	B	150	90	NA	NA	NA	NA
23	23	VARON	A	140	80	120	60	130	85
24	24	MUJER	B	180	95	150	90	140	95
25	25	VARON	A	150	90	140	105	140	80
26	26	MUJER	A	140	85	140	80	125	80
27	27	VARON	B	140	100	130	95	NA	NA
28	28	MUJER	A	170	90	135	75	125	70

# Practice. Adding variables to the data set

We have to add variables *age* and *weight* the dataset *hta.xls*



Editor de dades: hta

Fitxer Edita Ajuda

Afegeix una filera Afegeix una columna

	20	21	22	23	24	25	26	27	28
	tas9	tad9	tas10	tad10	tas11	tad11	tas12	Age	Weight
1	145	85	150	95	150	90	150	34	60
2	140	85	150	95	155	90	150	36	75
3	120	80	130	90	130	95	110	57	80
4	150	95	135	80	140	90	130	89	90
5	140	85	130	80	140	80	120	15	56
6	160	80	130	70	140	75	140	NA	NA
7	140	90	140	80	130	85	135	NA	NA
8	160	80	155	80	160	70	150	NA	NA
9	130	80	140	85	125	75	140	NA	NA
10	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	130	80	140	85	125	90	138	NA	NA
13	140	80	130	75	140	85	125	NA	NA
14	140	85	130	80	140	80	150	NA	NA
15	110	80	110	80	120	75	120	NA	NA
16	140	85	130	85	140	80	150	NA	NA
17	130	90	150	80	170	95	175	NA	NA
18	130	70	150	80	145	85	150	NA	NA
19	140	90	110	85	120	70	130	NA	NA
20	115	80	120	80	135	80	135	NA	NA
21	145	85	170	80	150	85	140	NA	NA
22	NA	NA	NA	NA	NA	NA	NA	NA	NA
23	120	80	110	75	130	85	140	NA	NA
24	135	75	150	100	130	85	140	NA	NA
25	130	85	140	90	170	90	135	NA	NA
26	NA	NA	NA	NA	NA	NA	NA	NA	NA
27	NA	NA	NA	NA	NA	NA	NA	NA	NA
28	130	80	140	80	130	70	130	NA	NA

Ajuda D'acord Anul·la

1. Import into Rcmdr the dataset *demora.dta* (STATA file)
2. Convert numeric variable *dolor* to factor (rename levels accordingly, eg. 0=low, 1=medium, 2=high)
3. Remove cases with missing data (NA) in *demora* variable.
4. Recode variable *edad* in a new variable named *rango\_edad* according to the following ranges:

0:25="young"

25:50="adult"

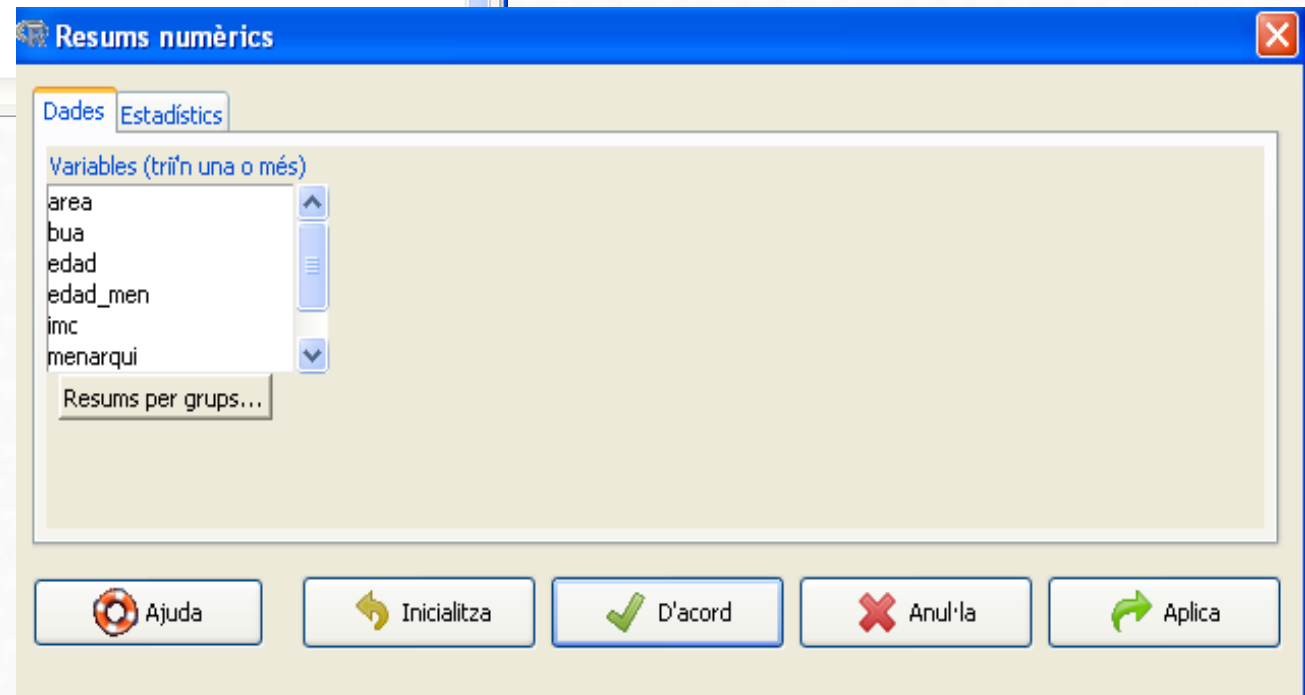
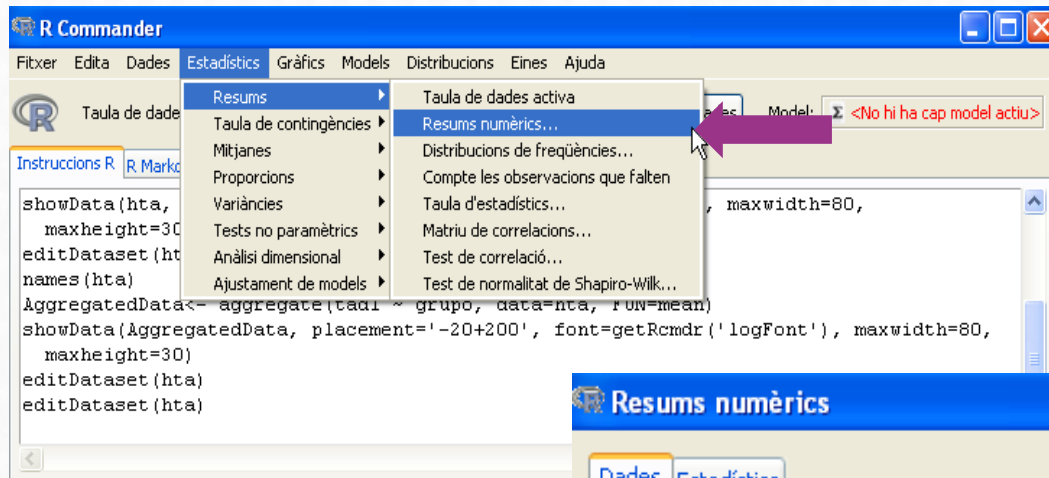
51:75="mid-old"

76:100="old"



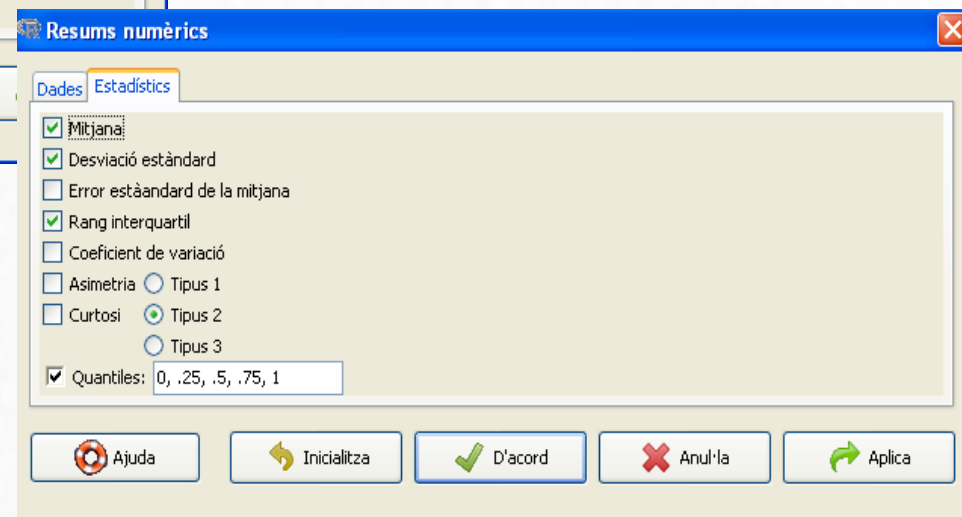
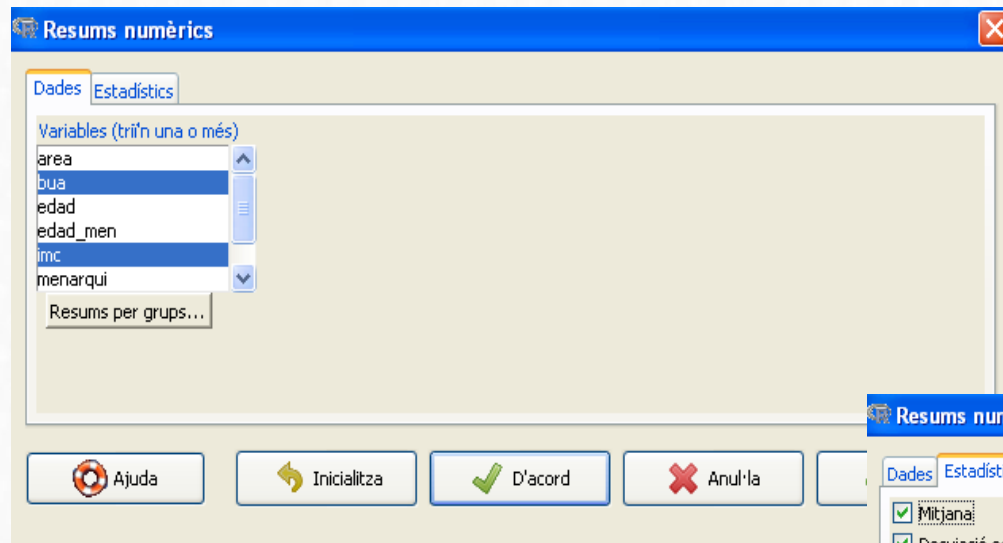
# Practice. Statistics with Rcmdr

We have to calculate some descriptive statistics with the dataset *osteo*.



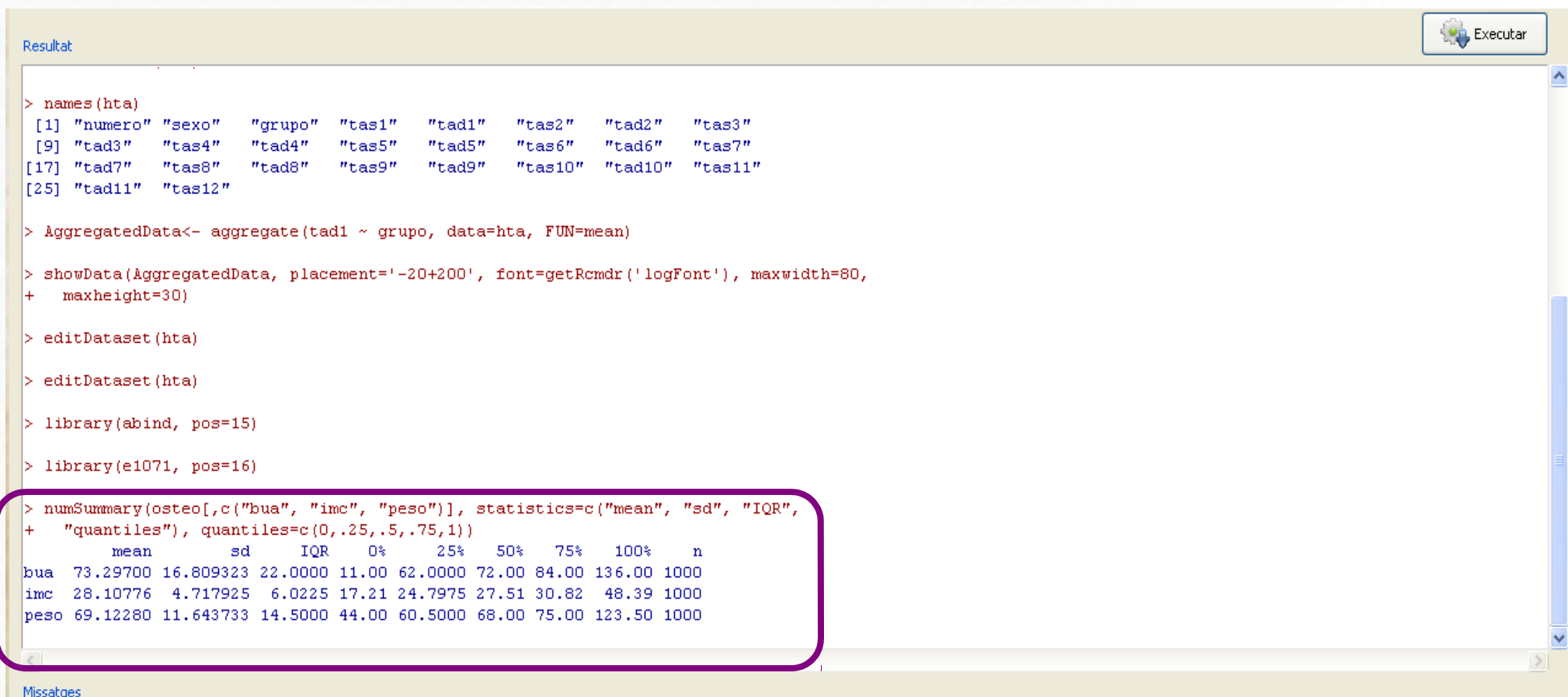
# Practice. Statistics with Rcmdr

We have to calculate some descriptive statistics with the dataset *osteo*.



# Practice. Statistics with Rcmdr

We have to calculate some descriptive statistics with the dataset *osteo*.



Resultat

Executar

```
> names(hta)
[1] "numero" "sexo" "grupo" "tas1" "tad1" "tas2" "tad2" "tas3"
[9] "tad3" "tas4" "tad4" "tas5" "tad5" "tas6" "tad6" "tas7"
[17] "tad7" "tas8" "tad8" "tas9" "tad9" "tas10" "tad10" "tas11"
[25] "tad11" "tas12"

> AggregatedData<- aggregate(tad1 ~ grupo, data=hta, FUN=mean)

> showData(AggregatedData, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
+ maxheight=30)

> editDataset(hta)

> editDataset(hta)

> library(abind, pos=15)

> library(e1071, pos=16)

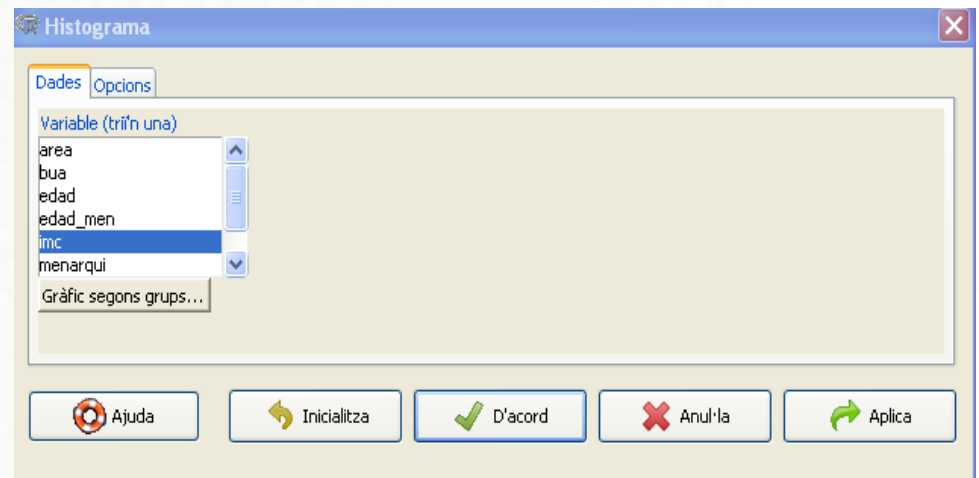
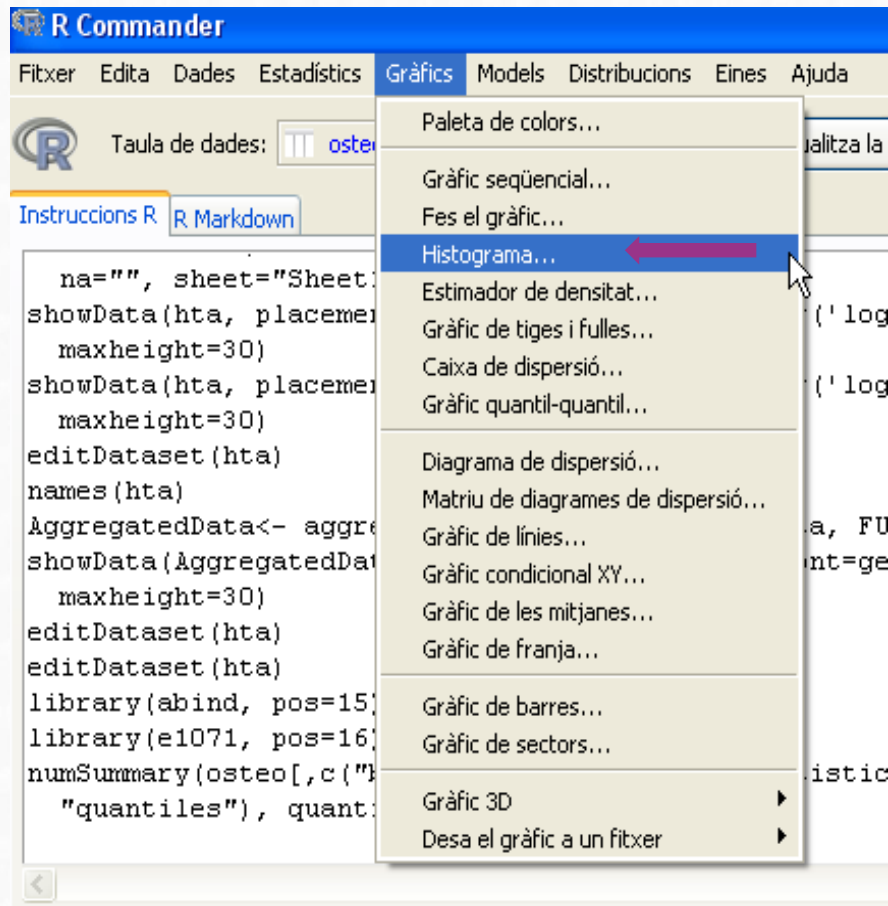
> numSummary(osteo[,c("bua", "imc", "peso")], statistics=c("mean", "sd", "IQR",
+ "quantiles"), quantiles=c(0,.25,.5,.75,1))
```

	mean	sd	IQR	0%	25%	50%	75%	100%	n
bua	73.29700	16.809323	22.0000	11.00	62.0000	72.00	84.00	136.00	1000
imc	28.10776	4.717925	6.0225	17.21	24.7975	27.51	30.82	48.39	1000
peso	69.12280	11.643733	14.5000	44.00	60.5000	68.00	75.00	123.50	1000

Missatges

# Practice. Graphics with Rcmdr

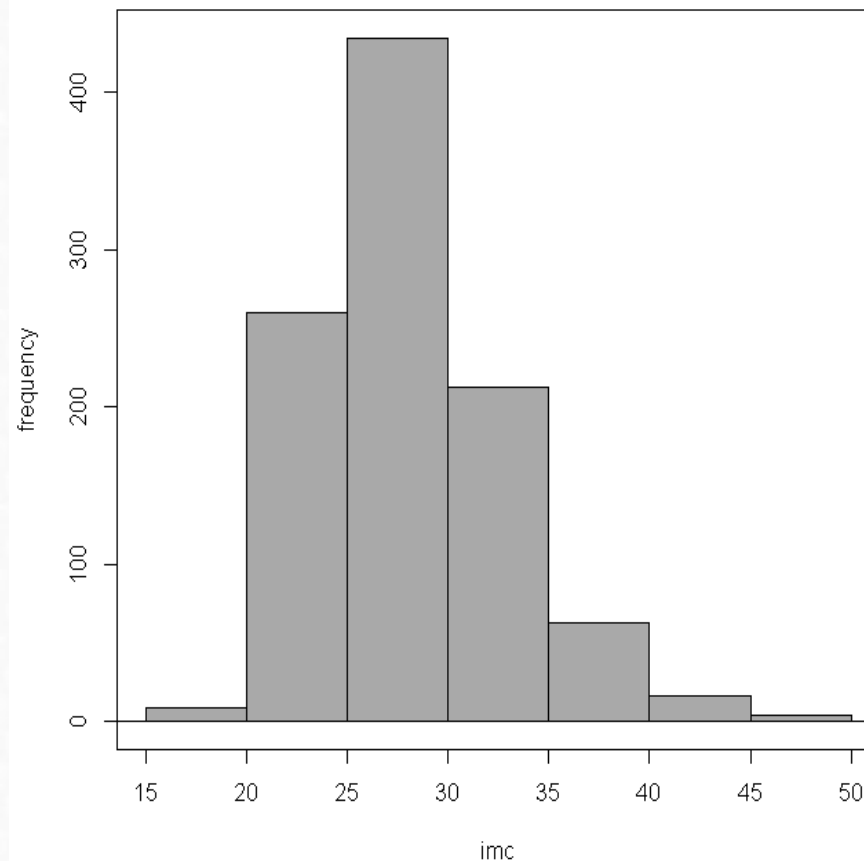
We want to see how the variable *imc* is distributed among the individuals





# Practice. Graphics with Rcmdr

We want to see how the variable *imc* is distributed among the individuals



# Practice. Running scripts with Rcmdr

We want to change the graphic colour, add a legend and a main title

Instruccions R [R Markdown](#)

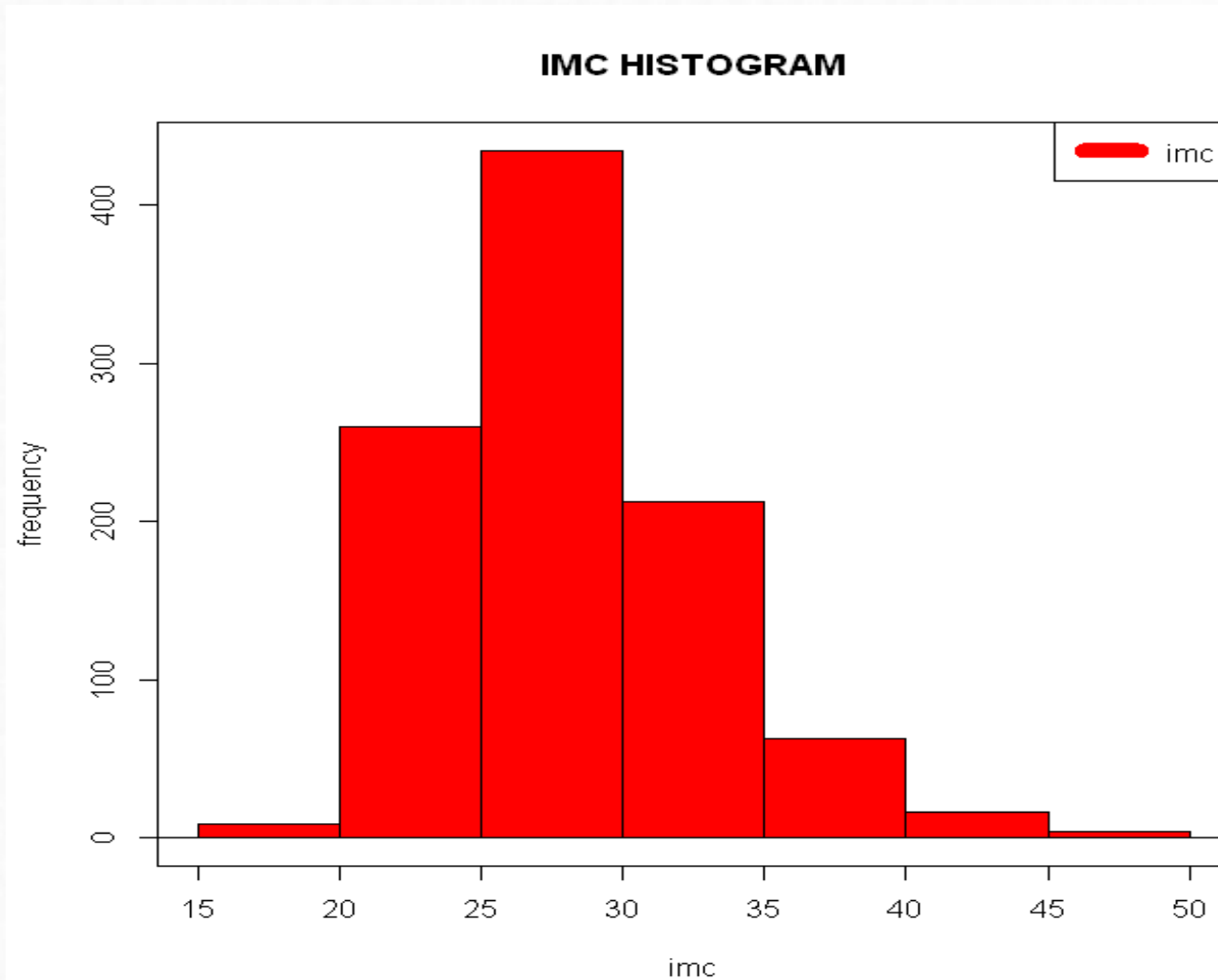
```
showData(hta, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
  maxheight=30)
showData(hta, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
  maxheight=30)
editDataset(hta)
names(hta)
AggregatedData<- aggregate(tad1 ~ grupo, data=hta, FUN=mean)
showData(AggregatedData, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
  maxheight=30)
editDataset(hta)
editDataset(hta)
library(abind, pos=15)
library(e1071, pos=16)
numSummary(osteo[,c("bua", "imc", "peso")], statistics=c("mean", "sd", "IQR",
  "quantiles"), quantiles=c(0, 25, 5, 75, 1))
with(osteo, Hist(imc, scale="frequency", breaks="Sturges", col="darkgray"))
```

idth=80,

```
showData(hta, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
  maxheight=30)
editDataset(hta)
names(hta)
AggregatedData<- aggregate(tad1 ~ grupo, data=hta, FUN=mean)
showData(AggregatedData, placement='-20+200', font=getRcmdr('logFont'), maxwidth=80,
  maxheight=30)
editDataset(hta)
editDataset(hta)
library(abind, pos=15)
library(e1071, pos=16)
numSummary(osteo[,c("bua", "imc", "peso")], statistics=c("mean", "sd", "IQR",
  "quantiles"), quantiles=c(0, 25, 5, 75, 1))
with(osteo, Hist(imc, scale="frequency", breaks="Sturges", col="red", main="IMC HISTOGRAM"))
legend("topright", "imc", col="red", lwd=10)
```

# Practice. Running scripts with Rcmdr

We want to change the graphic colour, add a legend and a main title



# Exporting results

Years ago, R-commander had the limitation that exporting data had to be done through saving plots and copy-pasting code to external software.

Now, Rcmdr integrates Markdown/Knitr results writing system, that allows the user to export all work (code, plots and results) to html pages in quick and easy way.

<https://github.com/adam-p/markdown-here/wiki/Markdown-Cheatsheet>

[http://www.rstudio.com/ide/docs/authoring/using\\_markdown](http://www.rstudio.com/ide/docs/authoring/using_markdown)

<http://yihui.name/knitr/>



# Practice. Export results as html

We want to export the results into an html report



Instruccions R R Markdown

```
<!-- R Commander Markdown Template -->

Replace with Main Title
=====

### Your Name

### `r as.character(Sys.Date())`

```${r echo=FALSE}
# include this code chunk as-is to set options
knitr::opts_chunk$set(comment=NA, prompt=TRUE, out.width=750, fig.height=8, fig.width=8)
library(Rcmdr)
library(car)
library(RcmdrMisc)
````
```

Resultat Genera informe

# Practice. Export results as html

```
<!-- R Commander Markdown Template -->
```

```
Generacion de Informes con Rcommander y Markdown  
=====
```

```
Ricardo Gonzalo
```

```
### `r as.character(Sys.Date())`
```

```
```${r echo=FALSE}  
# include this code chunk as-is to set options  
opts_chunk$set(comment=NA, prompt=TRUE,  
out.width=750, fig.height=8, fig.width=8)  
library(Rcmdr)  
```
```

```
Calculo de medias:  
- media de a
```

```
```${r calc1, echo=TRUE}  
a<-c(3,4,5,6)  
mean(a)  
```
```

```
- media de b  
```${r calc2, echo=TRUE}  
b<-c(10,20,30,40)  
mean(b)  
```
```

```
- grafico a b  
```${r plot1,fig.width=3,fig.height=3}  
plot(a,b,col="red")  
```
```

## Generacion de Informes con Rcommander y Markdown

Ricardo Gonzalo

2014-01-20

Calculo de medias:

- media de a

```
> a <- c(3, 4, 5, 6)  
> mean(a)
```

```
[1] 4.5
```

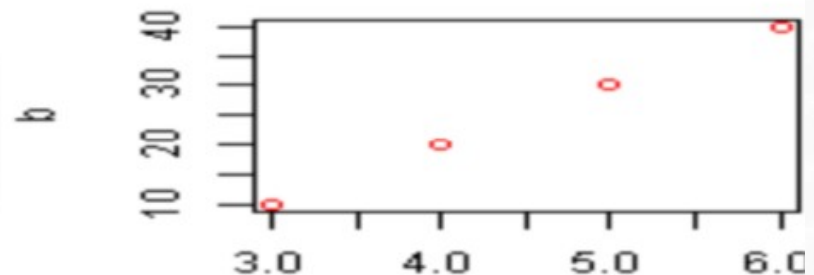
- media de b

```
> b <- c(10, 20, 30, 40)  
> mean(b)
```

```
[1] 25
```

- grafico a b

```
> plot(a, b, col = "red")
```



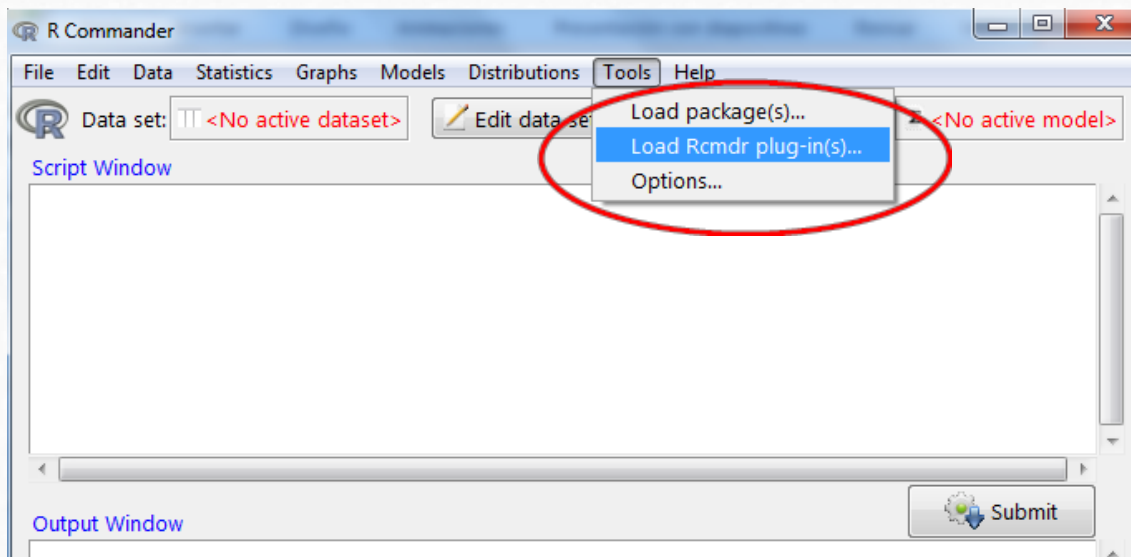
# Exercise

1. Load into Rcmdr the dataset in prostate.csv
2. Calculate some descriptive statistics for some variables
3. Make a graphic from one or two variables
4. Generate the report with all the data

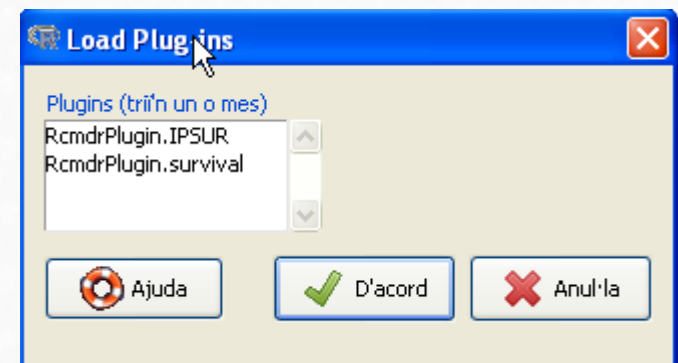
# Rcommander's plugins installation

Plug-ins are additional libraries that we may want to have available in R-commander

To check if they are correctly installed...



You should find...





## R manuals

- \* Intro for beginners [http://cran.r-project.org/doc/contrib/rdebuts\\_es.pdf](http://cran.r-project.org/doc/contrib/rdebuts_es.pdf)
- \* SimpleR <http://cran.r-project.org/doc/contrib/Verzani-SimpleR.pdf>
- \* Quick-R <http://www.statmethods.net/>
- \* Basic statistics with R and R-commander <http://knuth.uca.es/ebrcmdr/>
- \* Statistical methods with R and R-commander  
<http://cran.r-project.org/doc/contrib/Saez-Castillo-RRCmdrv21.pdf>
- \* Try R <http://tryr.codeschool.com/levels/1/challenges/1>

## R books

- \* Introductory Statistics with R
- \* R for SPSS and SAS users