

# Clamix / Food

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## Cars

### Food SR25 2012

## Encoding

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The food data ara available at USDA's National Nutrient Database for Standard Reference [[http://www.ars.usda.gov/Main/site\\_main.htm?modecode=12-35-45-00](http://www.ars.usda.gov/Main/site_main.htm?modecode=12-35-45-00)]. The last (2012) version is SR25.

Here is partial encoding rule file for SR22 based on the rules for SR14 used in the paper [<http://vlado.fmf.uni-lj.si/pub/preprint/imfm0800.pdf>] (2002).

### sr22.zip

```
encWater <- list(
  "[0]" = function(x) x<=0,
  "(0,5.65]" = function(x) x<=5.65,
  "(5.65,29.5]" = function(x) x<=29.5,
  "(29.5,53.9)" = function(x) x< 53.9,
  "[53.9,62.4]" = function(x) x< 62.4,
  "[62.4,70.75]" = function(x) x< 70.75,
  "[70.75,78.05]" = function(x) x<=78.05,
  "(78.05,88)" = function(x) x< 88,
  "[88,100]" = function(x) x<=100,
  "NA" = function(x) TRUE )

encEnergyKC <- list(
  "[0]" = function(x) x<=0,
  "(0,50]" = function(x) x<=50,
  "(50,104]" = function(x) x<=104,
  "(104,160]" = function(x) x<=160,
  "(160,232]" = function(x) x<=232,
  "(232,312]" = function(x) x<=312,
  "(312,386]" = function(x) x<=386,
  "(386,800)" = function(x) x< 800,
  "[800,905]" = function(x) x<=905,
  "NA" = function(x) TRUE )

encProtein <- list(
  "[0]" = function(x) x<=0,
  "(0,1.5]" = function(x) x<=1.5,
  "(1.5,4.1]" = function(x) x<=4.1,
  "(4.1,8.4)" = function(x) x< 8.4,
  "[8.4,16]" = function(x) x<=16,
  "(16,23.05]" = function(x) x<= 23.05,
  "[23.05,37]" = function(x) x<=37,
  "(37,75)" = function(x) x< 75,
  "[75,90]" = function(x) x<=90,
  "NA" = function(x) TRUE )

encTotLipi <- list(
  "[0]" = function(x) x<=0,
  "(0,0.3]" = function(x) x<=0.3,
  "(0.3,1.3)" = function(x) x< 1.3,
  "[1.3,3.8]" = function(x) x<= 3.8,
  "[3.8,8)" = function(x) x< 8,
  "[8,13.7]" = function(x) x<= 13.7,
  "[13.7,23.5]" = function(x) x< 23.5,
  "[23.5,85]" = function(x) x<= 85,
  "[85,100]" = function(x) x<=100,
  "NA" = function(x) TRUE )

encCarbohyd <- list(
  "[0]" = function(x) x<=0,
  "(0,3.5]" = function(x) x<=3.5,
  "(3.5,6.85]" = function(x) x<=6.85,
  "(6.85,11.35]" = function(x) x<=11.35,
  "(11.35,18.1)" = function(x) x< 18.1,
  "[18.1,27.8]" = function(x) x<=27.8,
  "(27.8,55.1]" = function(x) x<=55.1,
  "(55.1,73]" = function(x) x<=73,
  "(73,100]" = function(x) x<=100,
  "NA" = function(x) TRUE )
```

```
encFiberTd <- list(
  "[0]" = function(x) x<=0,
  "(0,0.8]" = function(x) x<=0.8,
  "(0.8,1.5]" = function(x) x<=1.5,
  "(1.5,2.1]" = function(x) x<=2.1,
  "(2.1,3.1]" = function(x) x<=3.1,
  "(3.1,5.6]" = function(x) x<=5.6,
  "(5.6,35]" = function(x) x<=35,
  "(35,60]" = function(x) x<=60,
  "(60,90]" = function(x) x<=90,
  "NA" = function(x) TRUE )

encAsh <- list(
  "[0]" = function(x) x<=0,
  "(0,0.7]" = function(x) x< 0.7,
  "[0.7,1]" = function(x) x< 1,
  "[1,1.24]" = function(x) x< 1.24,
  "[1.24,1.75]" = function(x) x< 1.75,
  "[1.75,3]" = function(x) x< 3,
  "[3,45]" = function(x) x< 45,
  "[45,95]" = function(x) x< 95,
  "[95,100]" = function(x) x<=100,
  "NA" = function(x) TRUE )

encCalcium <- list(
  "[0]" = function(x) x<=0,
  "(0,7]" = function(x) x<=7,
  "(7,12]" = function(x) x<=12,
  "(12,20]" = function(x) x<=20,
  "(20,34]" = function(x) x<=34,
  "(34,69]" = function(x) x<=69,
  "(69,159]" = function(x) x<=159,
  "(159,3000]" = function(x) x<=3000,
  "(3000,7400]" = function(x) x<=7400,
  "NA" = function(x) TRUE )

encPhosphor <- list(
  "[0]" = function(x) x<=0,
  "(0,25]" = function(x) x< 25,
  "[25,60]" = function(x) x< 60,
  "[60,112]" = function(x) x< 112,
  "[112,172]" = function(x) x< 172,
  "[172,208]" = function(x) x< 208,
  "[208,268]" = function(x) x< 268,
  "[268,6000]" = function(x) x< 6000,
  "[6000,10000]" = function(x) x<=10000,
  "NA" = function(x) TRUE )

encIron <- list(
  "[0]" = function(x) x<=0,
  "(0,0.35]" = function(x) x<=0.35,
  "(0.35,0.75]" = function(x) x<=0.75,
  "(0.75,1.2]" = function(x) x<=1.2,
  "(1.2,1.8]" = function(x) x<=1.8,
  "(1.8,2.5]" = function(x) x<=2.5,
  "(2.5,3.85]" = function(x) x<=3.85,
  "(3.85,80]" = function(x) x<=80,
  "(80,125]" = function(x) x<=125,
  "NA" = function(x) TRUE )

encSodium <- list(
  "[0]" = function(x) x<=0,
  "(0,10]" = function(x) x< 10,
  "[10,50]" = function(x) x< 50,
  "[50,66]" = function(x) x< 66,
  "[66,121]" = function(x) x< 121,
  "[121,351]" = function(x) x< 351,
  "[351,655]" = function(x) x< 655,
  "[655,15000]" = function(x) x< 15000,
  "[15000,30000]" = function(x) x<=30000,
  "NA" = function(x) TRUE )

encPotassium <- list(
  "[0]" = function(x) x<=0,
  "(0,90]" = function(x) x< 90,
  "[90,147]" = function(x) x< 147,
  "[147,211]" = function(x) x< 211,
  "[211,281]" = function(x) x< 281,
  "[281,340]" = function(x) x< 340,
  "[340,426]" = function(x) x< 426,
  "[426,6000]" = function(x) x< 6000,
  "[6000,17000]" = function(x) x<=17000,
  "NA" = function(x) TRUE )
```

```
encMagnesiu <- list(
  "[0]" = function(x) x<=0,
  "(0,9)" = function(x) x< 9,
  "[9,16]" = function(x) x< 16,
  "[16,21]" = function(x) x< 21,
  "[21,25]" = function(x) x< 25,
  "[25,32]" = function(x) x< 32,
  "[32,65]" = function(x) x< 65,
  "[65,600]" = function(x) x< 600,
  "[600,900]" = function(x) x<=900,
  "NA" = function(x) TRUE )

encZinc <- list(
  "[0]" = function(x) x<=0,
  "(0,0.23)" = function(x) x< 0.23,
  "[0.23,0.53]" = function(x) x< 0.53,
  "[0.53,1.06]" = function(x) x< 1.06,
  "[1.06,2.23]" = function(x) x< 2.23,
  "[2.23,4.12]" = function(x) x< 4.12,
  "[4.12,20]" = function(x) x< 20,
  "[20,150]" = function(x) x< 150,
  "[150,200]" = function(x) x<=200,
  "NA" = function(x) TRUE )

encCopper <- list(
  "[0]" = function(x) x<=0,
  "(0,0.045)" = function(x) x< 0.045,
  "[0.045,0.071]" = function(x) x< 0.071,
  "[0.071,0.1]" = function(x) x< 0.1,
  "[0.1,0.135]" = function(x) x< 0.135,
  "[0.135,0.23]" = function(x) x< 0.23,
  "[0.23,0.95]" = function(x) x< 0.95,
  "[0.95,6.5]" = function(x) x< 6.5,
  "[6.5,10]" = function(x) x<=10,
  "NA" = function(x) TRUE )

encManganes <- list(
  "[0]" = function(x) x<=0,
  "(0,0.016)" = function(x) x< 0.016,
  "[0.016,0.028]" = function(x) x< 0.028,
  "[0.028,0.118]" = function(x) x< 0.118,
  "[0.118,0.27]" = function(x) x< 0.27,
  "[0.27,0.71]" = function(x) x< 0.71,
  "[0.71,10]" = function(x) x< 10,
  "[10,70]" = function(x) x< 70,
  "[70,80]" = function(x) x<=80,
  "NA" = function(x) TRUE )

encSelenium <- list(
  "[0]" = function(x) x<=0,
  "(0,0.8)" = function(x) x< 0.8,
  "[0.8,3]" = function(x) x< 3,
  "[3,11]" = function(x) x<=11,
  "[11,20]" = function(x) x< 20,
  "[20,28.5]" = function(x) x< 28.5,
  "[28.5,160]" = function(x) x< 160,
  "[160,1500]" = function(x) x< 1500,
  "[1500,3000]" = function(x) x<=3000,
  "NA" = function(x) TRUE )

encVita <- list(
  "[0]" = function(x) x<=0,
  "(0,15]" = function(x) x<=15,
  "(15,52]" = function(x) x<=52,
  "(52,118]" = function(x) x<=118,
  "(118,230]" = function(x) x<=230,
  "(230,560]" = function(x) x<=560,
  "(560,1800]" = function(x) x<=1800,
  "(1800,50000]" = function(x) x<=50000,
  "(50000,100000]" = function(x) x<=100000,
  "NA" = function(x) TRUE )

encVitE <- list(
  "[0]" = function(x) x<=0,
  "(0,0.13)" = function(x) x< 0.13,
  "[0.13,0.2]" = function(x) x<=0.2,
  "(0.2,0.3]" = function(x) x<=0.3,
  "(0.3,0.63]" = function(x) x<=0.63,
  "(0.63,1.5]" = function(x) x<=1.5,
  "(1.5,20)" = function(x) x< 20,
  "[20,190]" = function(x) x<=190,
  "(190,195]" = function(x) x<=195,
  "NA" = function(x) TRUE )

encThiamin <- list(
```

```

" [0]"           = function(x) x<=0,
" (0,0.025]"    = function(x) x<=0.025,
" (0.025,0.05]" = function(x) x<=0.05,
" (0.05,0.08]"  = function(x) x<=0.08,
" [0.08,0.105]" = function(x) x<=0.105,
" (0.105,0.19]" = function(x) x< 0.19,
" [0.19,0.42]"  = function(x) x< 0.42,
" [0.42,8)"     = function(x) x< 8,
" [8,15]"       = function(x) x<=15,
" NA"           = function(x) TRUE )

encRiboflfla <- list(
" [0]"           = function(x) x<=0,
" (0,0.036]"    = function(x) x<=0.036,
" (0.036,0.076]" = function(x) x<=0.076,
" (0.076,0.14]" = function(x) x< 0.14,
" [0.14,0.192]" = function(x) x< 0.192,
" [0.192,0.25]" = function(x) x<=0.25,
" (0.25,0.36]"  = function(x) x<=0.36,
" (0.36,5)"     = function(x) x<=5,
" (5,7)"        = function(x) x<=7,
" NA"           = function(x) TRUE )

encNiacin <- list(
" [0]"           = function(x) x<=0,
" (0,0.35]"     = function(x) x<=0.35,
" (0.35,0.93)"  = function(x) x< 0.93,
" [0.93,2.26]"  = function(x) x< 2.26,
" [2.26,3.75]"  = function(x) x<=3.75,
" (3.75,5.41]"  = function(x) x<=5.41,
" (5.41,25]"    = function(x) x<=25,
" (25,60)"      = function(x) x< 60,
" [60,80]"      = function(x) x<=80,
" NA"           = function(x) TRUE )

encPantoAc <- list(
" [0]"           = function(x) x<=0,
" (0,0.125)"    = function(x) x< 0.125,
" [0.125,0.27]" = function(x) x< 0.27,
" [0.27,0.36]"  = function(x) x<=0.36,
" (0.36,0.53]"  = function(x) x<=0.53,
" (0.53,0.83)"  = function(x) x< 0.83,
" [0.83,15]"    = function(x) x< 15,
" [15,30]"      = function(x) x< 30,
" [30,40]"      = function(x) x<=40,
" NA"           = function(x) TRUE )

encVitB6 <- list(
" [0]"           = function(x) x<=0,
" (0,0.037]"    = function(x) x<=0.037,
" (0.037,0.07]" = function(x) x<=0.07,
" (0.07,0.12]"  = function(x) x<=0.12,
" (0.12,0.215]" = function(x) x<=0.215,
" (0.215,0.33]" = function(x) x<=0.33,
" (0.33,0.43]"  = function(x) x<=0.43,
" (0.43,5)"     = function(x) x< 5,
" [5,8]"        = function(x) x<=8,
" NA"           = function(x) TRUE )

encFolate <- list(
" [0]"           = function(x) x<=0,
" (0,5)"         = function(x) x< 5,
" [5,8)"        = function(x) x< 8,
" [8,12)"       = function(x) x< 12,
" [12,23)"      = function(x) x< 23,
" [23,48)"      = function(x) x< 48,
" [48,115)"     = function(x) x< 115,
" [115,1000)"   = function(x) x< 1000,
" [1000,2350]"  = function(x) x<=2350,
" NA"           = function(x) TRUE )

encVitB12 <- list(
" [0]"           = function(x) x<=0,
" (0,0.12]"     = function(x) x<=0.12,
" (0.12,0.3]"   = function(x) x<=0.3,
" (0.3,0.6]"    = function(x) x<=0.6,
" (0.6,1.4]"    = function(x) x<=1.4,
" (1.4,2.47]"   = function(x) x<=2.47,
" (2.47,3)"     = function(x) x< 3,
" [3,60)"       = function(x) x< 60,
" [60,120]"     = function(x) x<=120,
" NA"           = function(x) TRUE )

encVitC <- list(
" [0]"           = function(x) x<=0,

```

```

" (0,0.5) "      = function(x) x< 0.5,
" [0.5,1] "     = function(x) x<=1,
" (1,2.5) "     = function(x) x< 2.5,
" [2.5,6] "     = function(x) x< 6,
" [6,13.5] "    = function(x) x< 13.5,
" [13.5,34] "   = function(x) x< 34,
" [34,1500] "   = function(x) x< 1500,
" [1500,2400] " = function(x) x<=2400,
" NA "          = function(x) TRUE )

encFaSat <- list(
  "[0]" = function(x) x<=0,
  "(0,0.054)" = function(x) x< 0.054,
  "[0.054,0.29]" = function(x) x< 0.29,
  "[0.29,1.08]" = function(x) x< 1.08,
  "[1.08,2.4]" = function(x) x< 2.4,
  "[2.4,4.3]" = function(x) x<=4.3,
  "(4.3,7.9)" = function(x) x<=7.9,
  "(7.9,80)" = function(x) x< 80,
  "[80,100]" = function(x) x<=100,
  "NA" = function(x) TRUE )

encFaMono <- list(
  "[0]" = function(x) x<=0,
  "(0,0.035)" = function(x) x<=0.035,
  "(0.035,0.3)" = function(x) x<=0.3,
  "(0.3,1.25)" = function(x) x< 1.25,
  "[1.25,3]" = function(x) x<=3,
  "(3,5.6)" = function(x) x< 5.6,
  "[5.6,9.5]" = function(x) x< 9.5,
  "[9.5,65]" = function(x) x< 65,
  "[65,85]" = function(x) x<=85,
  "NA" = function(x) TRUE )

encFaPoly <- list(
  "[0]" = function(x) x<=0,
  "(0,0.115)" = function(x) x<=0.115,
  "(0.115,0.335)" = function(x) x<=0.335,
  "(0.335,0.685)" = function(x) x<=0.685,
  "(0.685,1.23)" = function(x) x< 1.23,
  "[1.23,2.73]" = function(x) x< 2.73,
  "[2.73,40]" = function(x) x< 40,
  "[40,60]" = function(x) x< 60,
  "[60,75]" = function(x) x<=75,
  "NA" = function(x) TRUE )

encCholestr <- list(
  "[0]" = function(x) x<=0,
  "(0,12]" = function(x) x<=12,
  "(12,45]" = function(x) x<=45,
  "(45,66]" = function(x) x<=66,
  "(66,80]" = function(x) x<=80,
  "(80,94]" = function(x) x<=94,
  "(94,550]" = function(x) x<=550,
  "(550,1900]" = function(x) x<=1900,
  "(1900,3100]" = function(x) x<=3100,
  "NA" = function(x) TRUE )

```

## Automatic generation of rules

The function `makeEnc` prints the definition of encoding function. We copy it and paste to R or to the encoding rules file:

```

makeEnc <- function(var,name,k){
  n <- length(var)
  v <- sort(var)
  steps <- seq.int(0,n,n %/% (k-1))
  cuts <- c(0,v[steps[1:(k-1)]],max(v))
  cat("enc",name," <- list(\n",sep="")
  cat('  "[0]" = function(x) x<=0,\n')
  for(j in 2:k) cat('  ("',cuts[j-1],',' ,cuts[j],',' ) = function(x) x<=',cuts[j],',' ,'\n',sep='')
  cat('  "NA" = function(x) TRUE )\n')
}

> makeEnc(water,"Water",8)
encWater <- list(
  "[0]" = function(x) x<=0,
  "(0,6.43]" = function(x) x<=6.43,
  "(6.43,43.05]" = function(x) x<=43.05,
  "(43.05,59.79]" = function(x) x<=59.79,

```

```
"(59.79,68.81]" = function(x) x<=68.81,  
"(68.81,77.08]" = function(x) x<=77.08,  
"(77.08,87.3]" = function(x) x<=87.3,  
"(87.3,100]" = function(x) x<=100,  
"NA" = function(x) TRUE )
```

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