

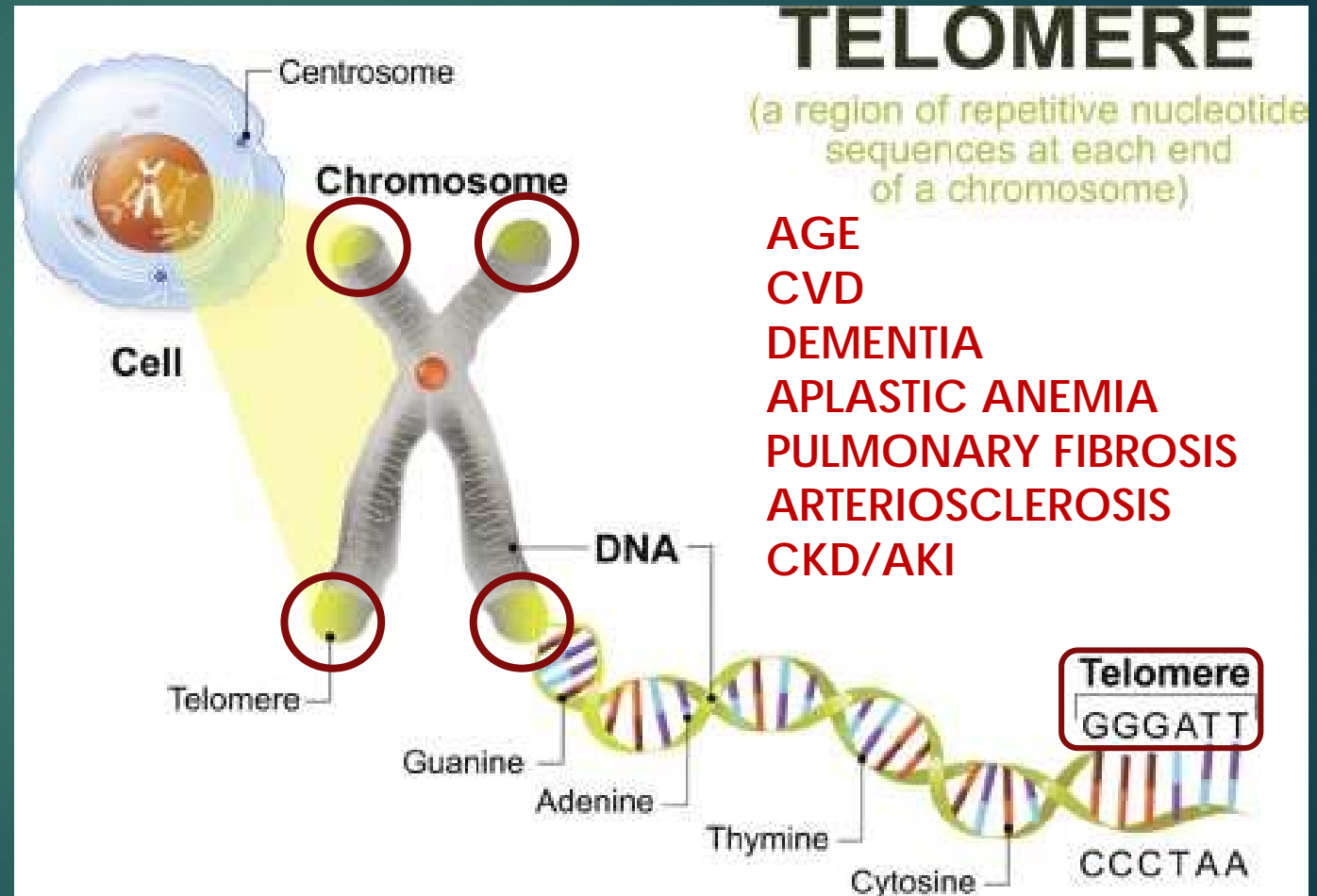
Relation of serum magnesium (sMg) with the telomere length (TL) in hemodialysis patients

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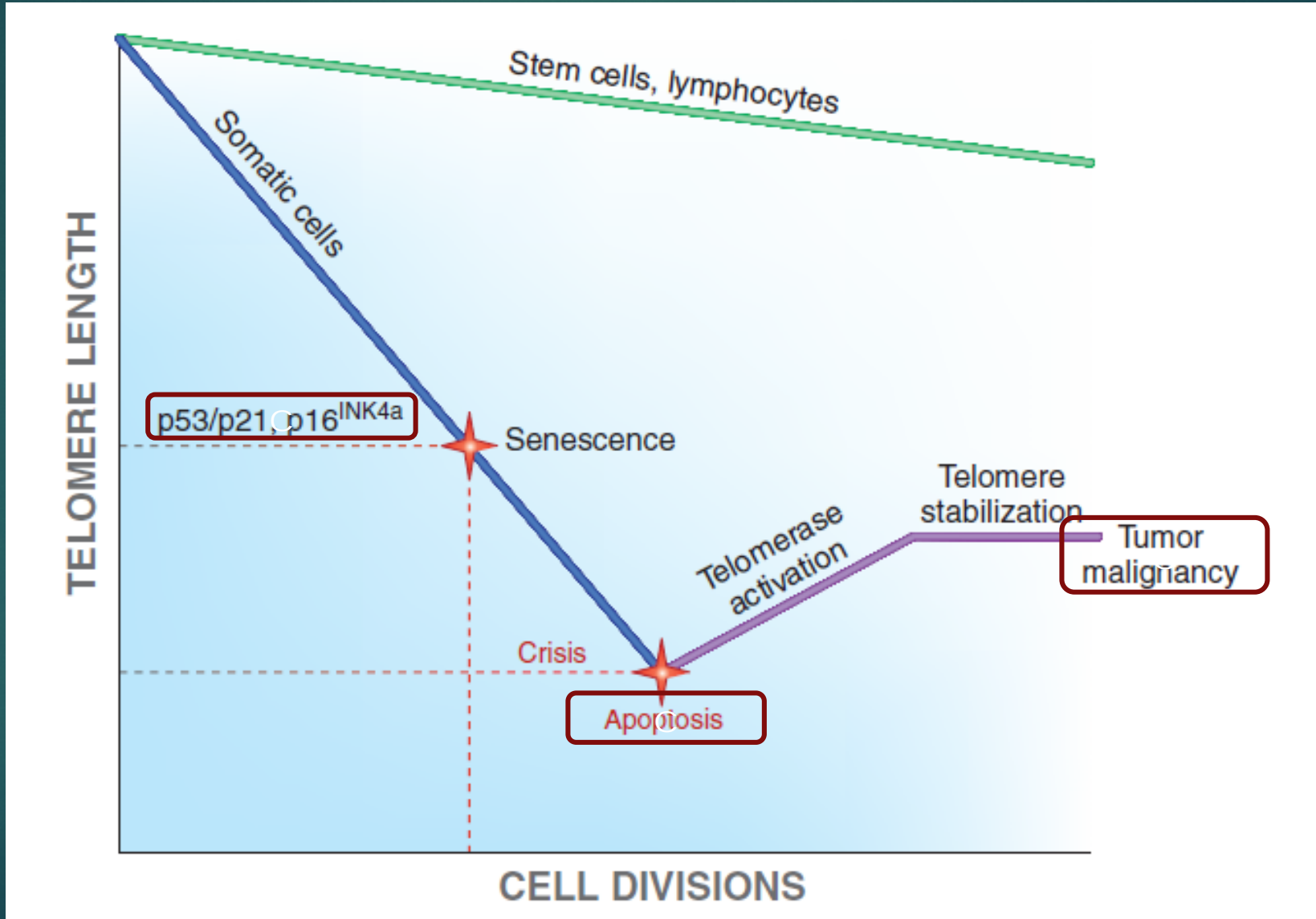
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Telomere and chromosome

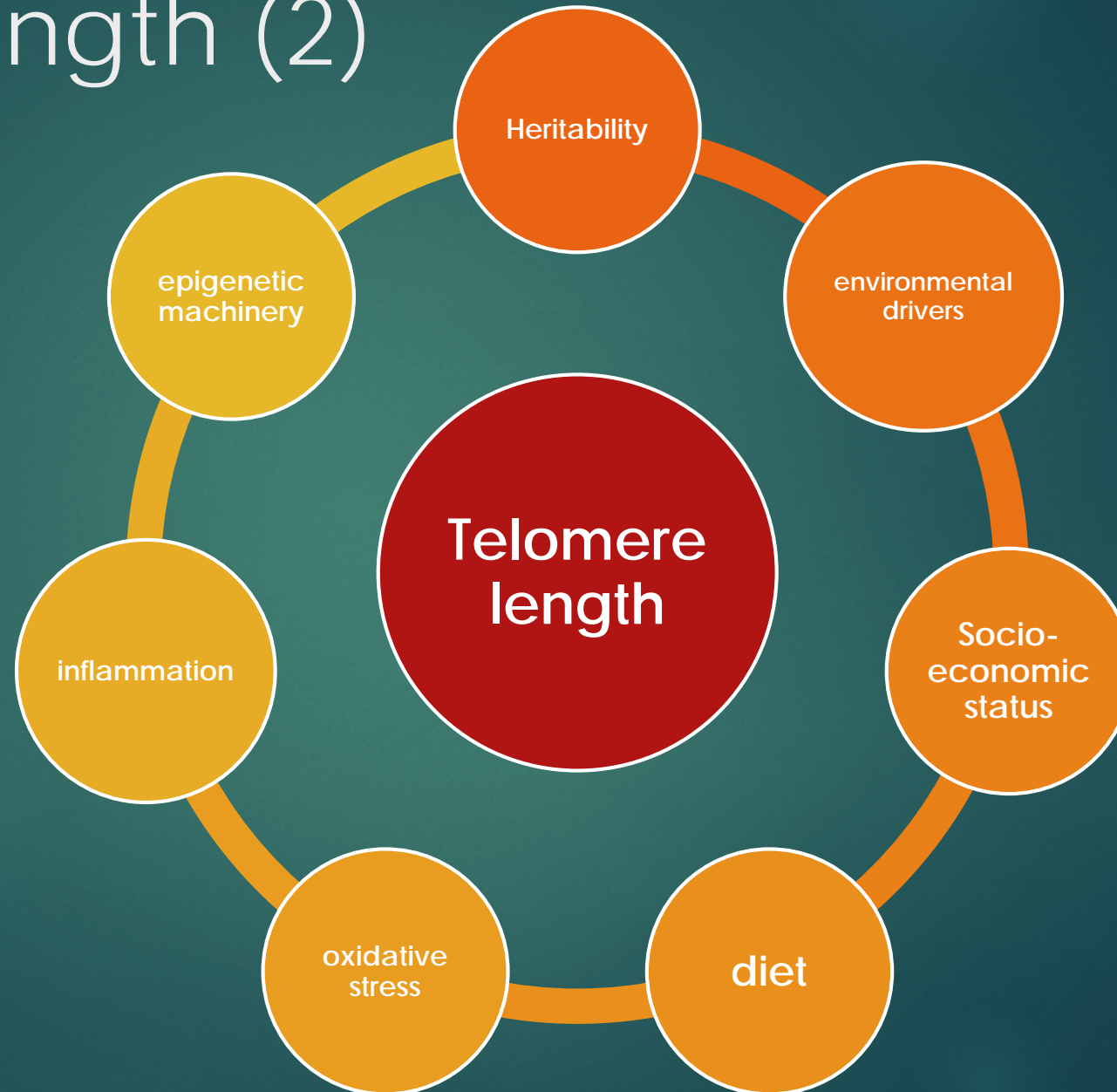
- ▶ Repetitive TTAGGG sequences at the end of chromosome, 5000 to 15,000 bp.
- ▶ The nuclear role of telomeres is to prevent chromosome ends from being identified as double strand breaks in DNA, thus limiting chromosome shortening and recombination.
- ▶ Shortens with repeated cell divisions. When too short, cells may be unable proliferate.



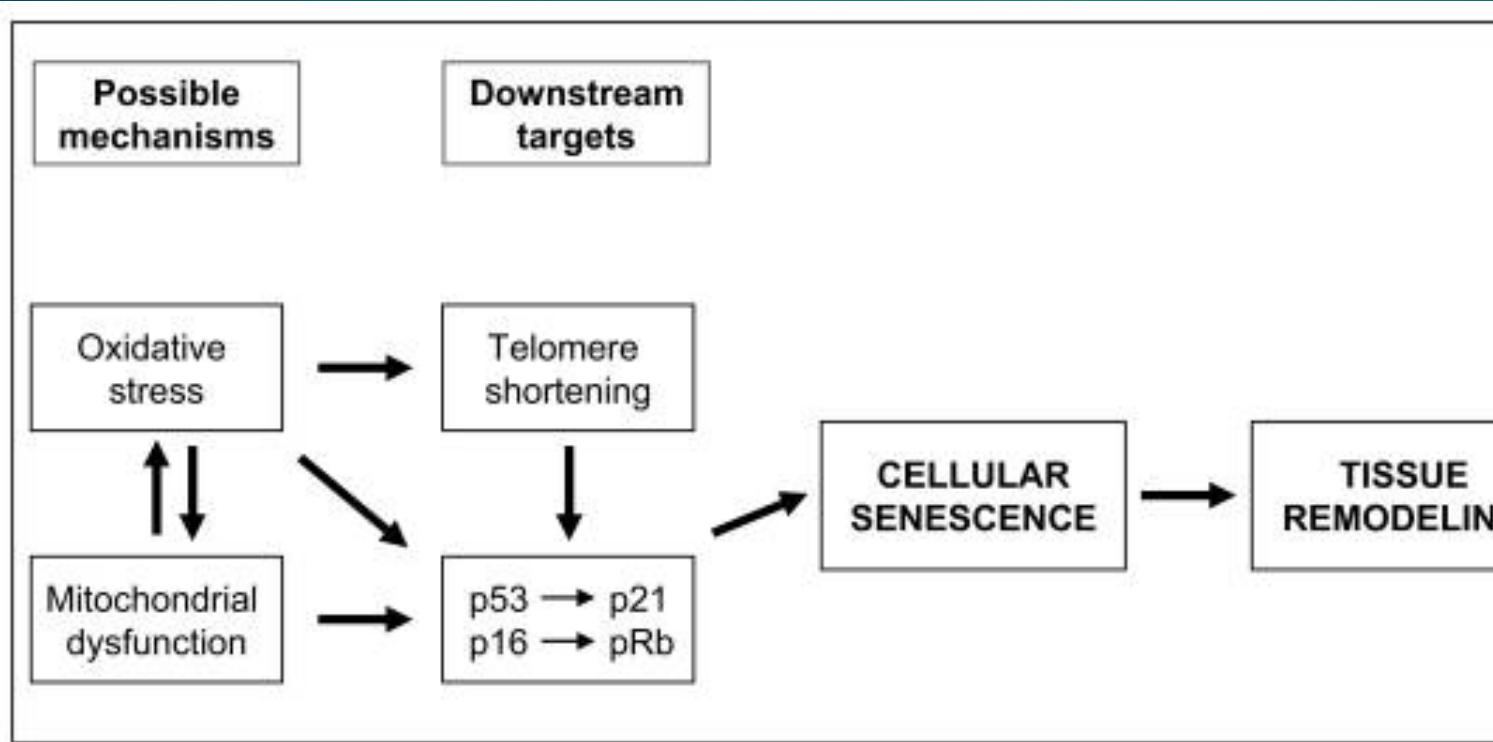
Telomere length – cell apoptosis



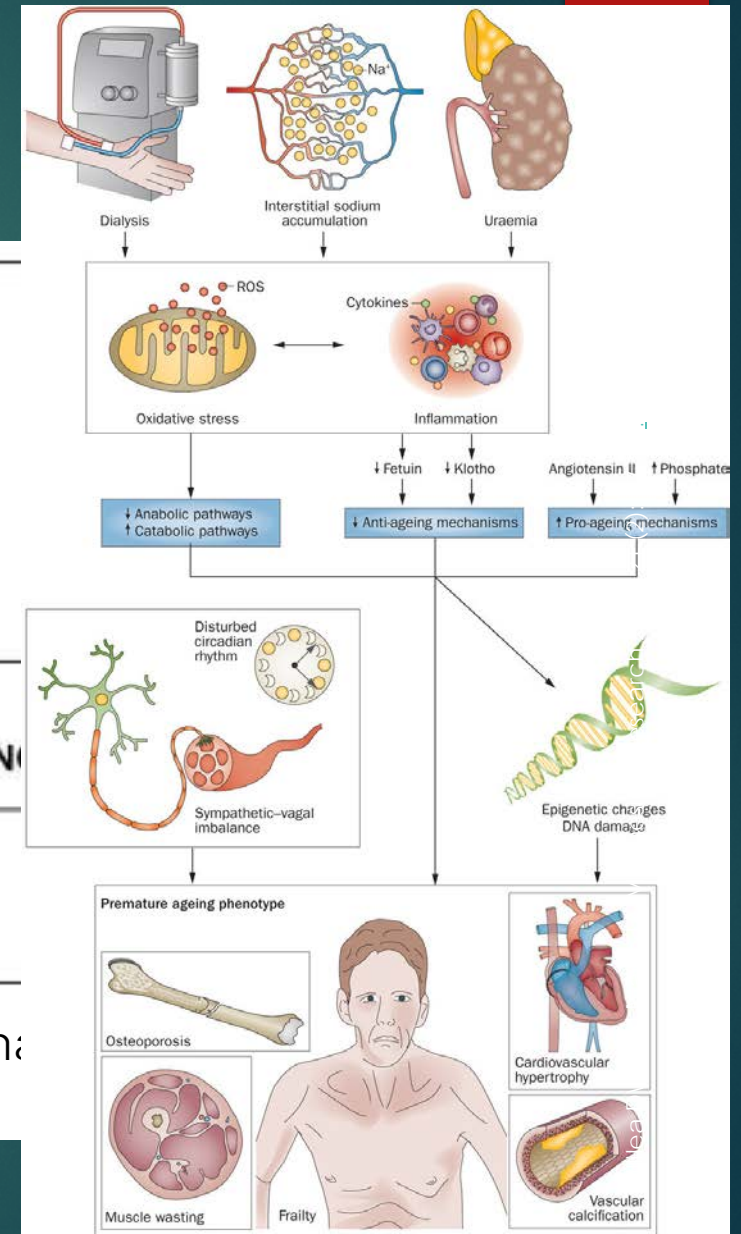
Telomere length (2)



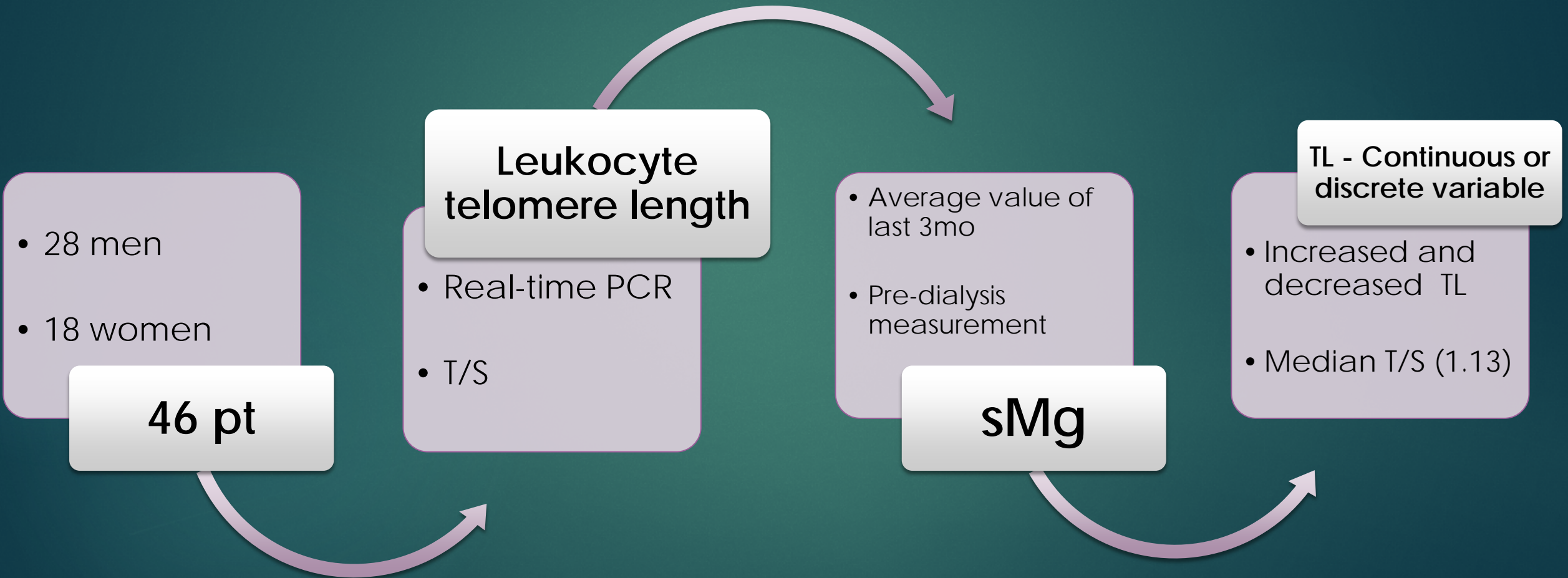
Mg and aging...



Schematic of the cellular pathways that are activated during magnesium deficiency that can promote age-related diseases.



Methods...



Results...

	ITL	DTL	P value
Age	56 ± 14	70 ± 9	<0.001
Pulse pressure (PP)	58 ± 14	68 ± 14	<0.05
Diabetes mellitus (DM)	8.7%	34.8%	<0.05
Periferal vascular disease (PVD)	30.4%	65.2%	<0.05
Serum Mg (sMg)	2.6 ± 0.2	2.3 ± 0.3	<0.001

Results...

Statistics

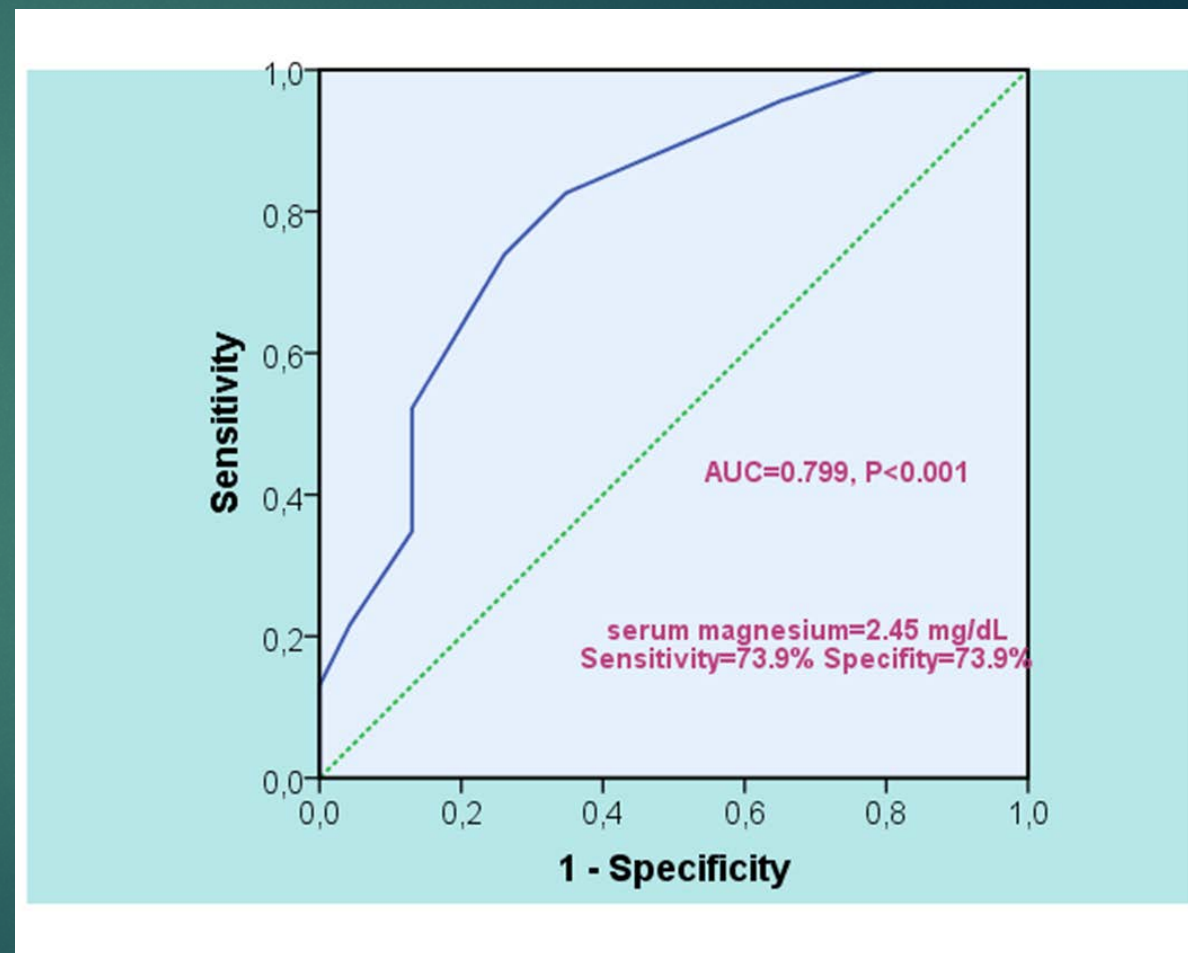
Multiple regression model:

after adjustment for age, PP, DM, PVD:

sMg related to IMT (OR=65.6, $p=0.032$)

ROC analysis:

ideal predictive value of sMg
2.45mg/dl – sensitivity/specificity for
ITL 73.9%, AUC 0.799 ($p<0.001$)





Results...

Statistics (2)

TL as ***continuous variable*** was directly related to sMg ($r=0.454$; $p<0.01$)

Multiple factor analysis

sMg ($\beta=0.147$, $p<0.05$), female and age are the main determinants of TL, explaining the 8.8% of its variance

Discussion...

Higher sMg, age, females are related with ITL in HD patients

Can an increase in magnesium intake affect the TL and - as a result - the survival?