# MAIN GENES OF INTEREST (for now)

* eIF4, eIF2 🡪🡪🡪 major SG signalling pathway regulators.
* C9ORF72 🡪🡪🡪 hexa-repetition of bases, one of the causing factors of ALS.
* G3BP1, G3BP2 🡪🡪🡪 related to SG in neurodegenerative diseases.
* (Pre-Initiation Complex), TIA1 🡪🡪🡪 Coalesce with mRNA to form SG during stress conditions.
* mTOR 🡪🡪🡪 its inhibition induces the phosphorylation of eIF4E-binding protein.
* 4E-BP 🡪🡪🡪 its phosphorylation induces a cascade effect leading to the removal of

eIF4G–eIF4A from the cap of the mRNA.

* TDP-43 🡪🡪🡪 a RNP highly present in both FTD and ALS.
* FUS 🡪🡪🡪 a nuclear RBP.
* HNRNPA2B1 🡪🡪🡪 RNP that participate in the RNA splicing process.
* EWS 🡪🡪🡪 //
* TAF15 🡪🡪🡪 when mutated it is linked to ALS.
* MATR3 🡪🡪🡪 //
* p62 (Sequestosome-1) 🡪🡪🡪 protein that post-translationally modify SG by adducts of phosphate groups or ubiquitin.
* Tia1 🡪🡪🡪 its knockout increases the secretion of cytokines such as TNF (Tumour Necrosis Factor).
* TREM2 🡪🡪🡪 dangerous genetic risk factor for Alzheimer’s Disease.
* Atxn2 🡪🡪🡪 colocalizes with profilin 1(linked to ALS) in neurons.
* GCN2 🡪🡪🡪 (eIF2α) one of the 4 components of an adaptive monitoring system, it checks the level of charge tRNAs and nutrient/starvation stress.
* U2AF1 🡪🡪🡪 direct modification that affect SGs.
* YTHDF2 🡪🡪🡪 needed for SG assembly, stabilization and later disassembly.