GENIE AND NEUROQUANT: WHAT SHOWS THE DIFFERENT BRAIN INJURIES IN CIRS? VOLUME OR PHYSIOLOGY? BOTH?

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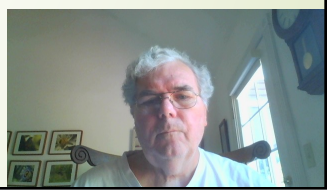
Surviving Mold, 8/14/2022



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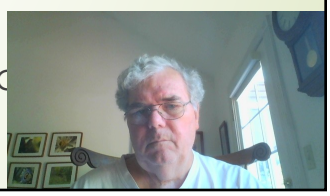
CONFLICTS OF INTEREST

- R SHOEMAKER
- ROYALIES:
  - SURVIVING MOLD
  - PROGENEDX
- DAVID LARK
  - DIRECTOR – NSJ EnviroScienc



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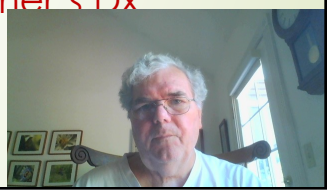
Underlying Work with NQ

- Validation of cognitive impairment
- Validation of CIRS source
- Validation of response to therapy
- Search for new Diagnostics & Therapies, especially transcriptomics
- And the gorilla in the closet: Alzheimer's Dx



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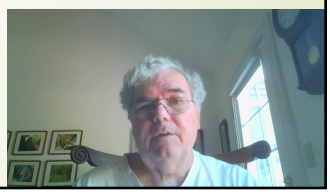
N for GENIE = 1514
N for NQ = 569

- ALL GENIE ANALYSES DONE AT ONE SITE
- DYNAMIC DATA SET
- AGE DISTRIBUTION

<18	4.9 %
18-30	13.1%
31-45	26.7%
46-60	35.4%
61-71	15.0%
71+	4.9%



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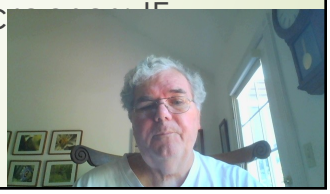
Look now for transcriptomics testing (GENIE) to lead the way

- Hypometabolism affects those with CFI/CIRS
- Without correction back to control levels, ribosomal genes or nuclear encoded mitochondrial genes or mitoribosomal genes or mitochondrial transports, NO BENEFIT
- Even worse, if MARCoNS and mitoribosomal gene injury are present, atrophy inc[illegible] ABSENT, ATROPHY DECREASES



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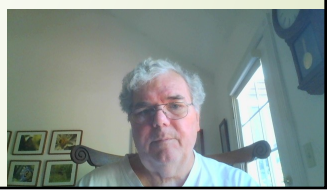
Differential of brain structures by illness example: enlarged SLV

- Loss of cortical gray
- Normal pressure hydrocephalus (diarrhea, ataxia and dementia)
  - Communicating hydrocephalus
- Diffuse atrophy
- Congenital



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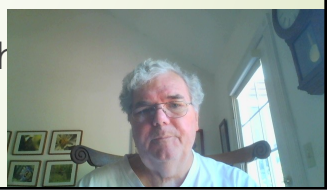
Difficult distinction: atrophy v NPH

- NQ is read on one sagittal view without contrast
- Not best way to see NPH!
- Look for "Evan's Index."
  - Ratio of max width of both horns of lat ventricle to inner table of cranium
  - Any ratio of > 0.31 is suspicious
- NPH in face of atrophy is hydrocephl vacuo"



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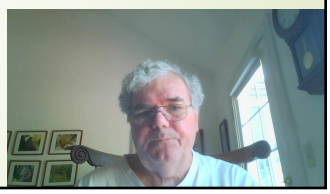
Does mean atrophic nuclei by age in CIRS cases (age 7-92) help us?

- 0-17 1.38
- 18-30 1.92
- 31-45 2.45
- 46-60 3.15
- 61-70 3.91
- 71+ 5.20



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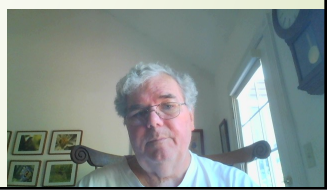
Mean AN in SLV enlargement

Age	N=	%	Mean AN
0-17	2	1.8	0.5
18-30	12	5.0	1.76
31-45	37	7.0	1.86
46-60	79	12.1	3.08
61-70	26	14.4	4.44
71+	26	42.6	5.70



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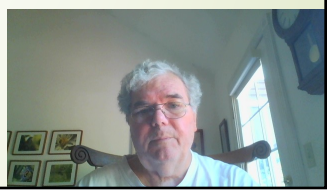
Simple example of age-related changes that must be heeded

- FP used to be enlarged in most CIRS cases
- Can't apply "all ages" to atrophy calculations
- When we get the atrophy by age right, the CIRS players affect white and grey matter equally
- NOT like Alzheimer's
- Use the NQ calculator on www.survivingmold.com



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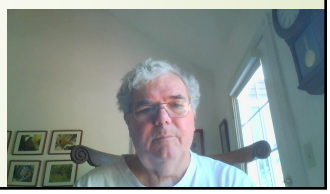
DOES NUCLEAR ATROPHY BY AGE; #, % IN A LARGER DATA SET HELP?

AGE	N=	%
0-17	14	2.4
18-30	71	12.2
31-45	136	23.4
46-60	130	22.4
61-70	120	20.6
71+	54	10.1



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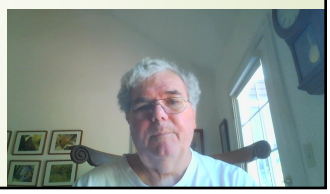
Cortical grey atrophy(CG-I)/number of patients in NQ DATA SET

- CG-0 376 patients 65.8%
- CG-1 124 patients 21.7 %
- CG-2 67 patients 11.7%



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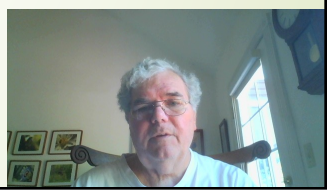
SUPERIOR LATERAL VENTRICAL ENLARGEMENT

- 0; 441 PATIENTS 75.5 % TOTAL
- 1; 143 PATIENTS 24.5 % TOTAL



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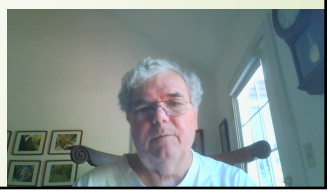
NUCLEAR ATROPHY BY AGE AND INCIDENCE

AGE	SPREAD	N=	%
0-17	3-73	74	4.8%
18-30	78-278	198	13.1
31-45	277-670	393	25.7
46-60	671-1202	531	35.0
61-71	1203-1429	226	14.8
71+	1430-1524	84	5.5



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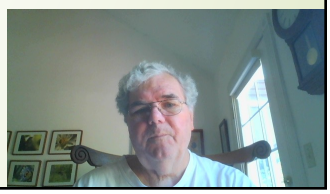
MORE CHARACTERIZATION

GENDER FEMALE	N= 967	64.4%
GENDER MALE	N= 537	35.6%
MEAN AGE	39.6	
STAGE 1 =	55.2%	N=663
STAGE 2 =	29.8%	N=358
STAGE 3 =	8.5%	N=103
STAGE 4 =	3.7%	N=45
STAGE 5 =	1.8%	N=22



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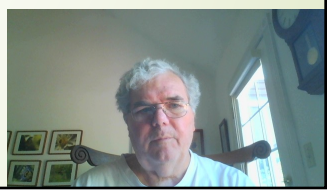
MORE CHARACTERIZATION GENIE/NQ DATA SET

HYPOMETABOLISM ABSENT	N=488	35.6%
HYPOMETABOLISM PRESENT	N=876	64%



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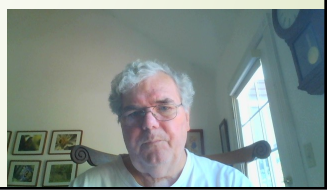
EXAMPLE OF SORTING
CG-1 BY ENDOTOXIN MARKERS CD 14, TLR4

- TOTAL CG-1 191
- CD14 IN CG-1= 28
- TLR4 IN CG-1 = 13
- % + ENDOS FOR CG-1 = 21.5%



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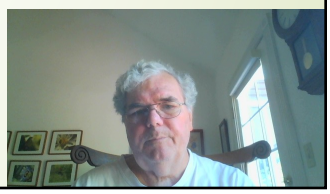
CG-1 +, BY + MAPK, AND WITH + ENDO

CG1+	ACT1-1	ENDO 7
CG1+	ACT 2-1	ENDO 3
CG1+	ACT 3-1	ENDO 1
CG1+	ACT 4-1	ENDO1
CG1+	ACT 5-0	ENDO 0
CG 1+	ACT 6-0	ENDO 0



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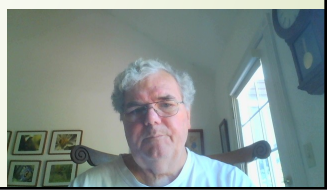
CONCLUSION RE CG-1

- CAN'T ASCRIBE CHANGES TO MAKE CG-1 FROM NA
- ONLY 21% ARE CORRELATED WITH ENDOTOXINS IF WE ONLY RELY ON NQ
- IN ANOTHER NQ COHORT 287 ARE NEGATIVE = 76%
- IN THAT NQ COHORT 84 ARE POSITIVE = 24.1%
- IN SUMMARY, GENIE PICKS UP ABOUT 25% OF CG-1 AS ENDOTOXIN-MEDIATED



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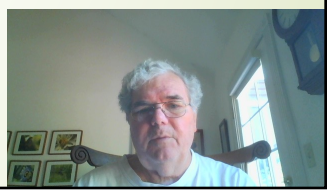
ACTINOBACTERIA AND CYTOSKELETONS

- TUBULINS A4A AND BB1 ARE MICROTUBULES
- DEFECT IN VDAC OFTEN ASSOCIATED WITH VALINOMYCIN
- OF 381 POSITIVE NA, 104 WERE + BBI AND 101 WERE + TUBA4A
- IF GENIE SAYS CYTOSKELETON ABNORMALITIES. LOOK FOR 33% NA!



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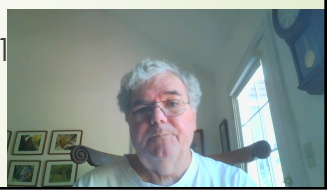
ACTINOBACTERIA AND NA

- COHORT OF + NA
- NA=1; N=41 10.7%
- NA=2 N= 72 18.8%
- NA=3 N= 86 22.5%
- NA =4 N= 73 19.1%
- NA =5 N=43 11.2%
- NA =6 N=23 6.0 %
- NOTE: OF NA 6, 20 WERE 6-2-1 (CG-2 SLV-1



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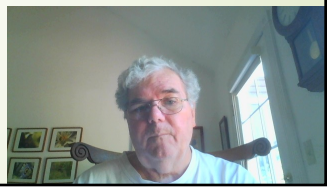
ACTINOBACTERIA AND TGFBR 1, 2, 3

- SPECIFIC IMMUNOTOXIC REACTIVITY FOUND IN + BOTH ACTINO MAPK AND +; + TGFBR1, 2, 3 = 62
- TOTAL GENIE PREDICTING COMBO OF NA IN COHORT WITH MAPK PLUS CYTOSKELETON = 38% PLUS + CG-1 AND NA =6% SUM 44%
- ENDOS 21%
- CG-1 AND CG-2 IS APPROXIMATELY 43/ 569 =7.5 %.
- CAUSATIVE AGENTS GENIE – INCLUDE SLV SUM TO 98%



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DYNAMIC DATA SET

- ALWAYS CHANGINGBASED ON NEW DATA
- PRIOR GENIE DATA SHOWED CAUSATION OF 75%
- NOW, WITH SPECIFIC CAUSATION FROM ACTINOBACTERIA AND ENDOTOXINS, SUM TOTAL IS 93%, WITH MYCOTOXINS 7%
- THOSE NUMBERS UNCHANGED
- CANNOT TOLE OF NQ IN GENIE AND ROLE ON GENIE IN NQ

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