

## Supplemental Online Content

Ballreich JM, Gross CP, Powe NR, Anderson GF. Allocation of National Institutes of Health funding by disease category in 2008 and 2019. *JAMA Netw Open*. 4(1):e2034890. doi:10.1001/jamanetworkopen.2020.34890

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**eFigure 1.** Burden of Disease and NIH Funding 1996 and 2019

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This supplemental material has been provided by the authors to give readers additional information about their work.

**eTable 1.** U.S. Burden of Disease 1996 and 2019 for 29 Diseases

Disease Category	1996 Burden (Proportion of total US DALYs)	2019 Burden (Proportion of total US DALYs)	Change
Total	51.1%	45.3%	-11.3%
Cardiovascular	11.5%	8.1%	-29.5%
Ischemic Heart Disease	11.5%	8.1%	-29.5%
Cancer	9.2%	8.3%	-10.3%
Lung Cancer	4.4%	3.8%	-13.4%
Colon And Rectum Cancer	1.6%	1.6%	-2.9%
Breast Cancer	1.6%	1.3%	-19.4%
Prostate Cancer	0.9%	0.8%	-3.7%
Ovarian Cancer	0.4%	0.4%	-7.5%
Cervical Cancer	0.2%	0.2%	-10.1%
Uterine Cancer	0.2%	0.2%	43.7%
Neurological	7.2%	7.1%	-0.7%
Stroke	3.8%	3.5%	-8.4%
Alzheimer's And Dementias	1.6%	1.8%	14.1%
Schizophrenia	1.0%	0.9%	-9.2%
Epilepsy	0.3%	0.3%	-10.7%
Parkinson's Disease	0.3%	0.4%	47.4%
Multiple Sclerosis	0.2%	0.2%	15.2%
Other	7.1%	5.2%	-27.1%
Injuries	3.9%	2.7%	-32.4%
Neonatal Disorders	2.1%	1.4%	-31.6%
Oral Disorders	1.1%	1.1%	1.1%
Respiratory	6.2%	6.9%	12.3%
COPD	3.7%	4.5%	23.1%
Pneumonia	1.5%	1.1%	-24.7%
Asthma	1.0%	1.3%	27.2%
Mental Health	3.6%	3.5%	-2.6%
Depressive Disorders	2.5%	2.4%	-4.8%
Alcohol Use Disorders	1.1%	1.1%	2.5%
Endocrine	2.6%	4.0%	52.9%
Diabetes	2.6%	4.0%	52.9%
Infectious Diseases	2.2%	0.4%	-79.6%
HIV/AIDS	2.0%	0.4%	-81.7%
STIs ex HIV	0.1%	0.0%	-21.5%
Tuberculosis	0.1%	0.0%	-56.6%
GI	1.5%	1.7%	13.8%
Cirrhosis	1.4%	1.7%	21.5%
Peptic Ulcer	0.2%	0.1%	-45.4%
Sensory	0.1%	0.0%	-18.2%
Otitis Media	0.1%	0.0%	-18.2%

**eTable 2. NIH Funding 1996 and 2019**

Disease Category	1996 NIH Spending (\$ millions)*	2019 NIH Spending (\$ millions)	Change
Total	\$9,750	\$15,616	67%
Infectious Diseases	\$3,124	\$3,879	24%
HIV/AIDs	\$2,794	\$3,037	9%
STIs Ex HIV	\$203	\$354	74%
Tuberculosis	\$127	\$488	284%
Cancer	\$1,632	\$1,995	22%
Breast Cancer	\$756	\$709	-6%
Lung Cancer	\$253	\$419	66%
Colon and Rectum Cancer	\$209	\$294	41%
Prostate Cancer	\$183	\$263	43%
Cervical Cancer	\$119	\$106	-11%
Ovarian Cancer	\$83	\$168	101%
Uterine Cancer	\$28	\$36	30%
Neurological	\$1,487	\$3,534	138%
Alzheimer's And Dementias	\$603	\$2,398	298%
Stroke	\$238	\$350	47%
Schizophrenia	\$221	\$263	19%
Multiple Sclerosis	\$164	\$111	-32%
Parkinson's Disease	\$153	\$224	47%
Epilepsy	\$109	\$188	72%
Other	\$816	\$1,589	95%
Injuries	\$393	\$897	128%
Oral Disorders	\$370	\$613	65%
Neonatal Disorders	\$52	\$79	51%
Mental Health	\$793	\$1,134	43%
Alcohol Use Disorders	\$508	\$556	9%
Depressive Disorders	\$285	\$578	103%
Endocrine	\$592	\$1,099	86%
Diabetes	\$592	\$1,099	86%
Cardiovascular	\$533	\$1,443	171%
Ischemic Heart Disease	\$533	\$1,443	171%
Respiratory	\$408	\$571	40%
Asthma	\$162	\$313	94%
COPD	\$124	\$112	-9%
Pneumonia	\$123	\$146	19%
GI	\$348	\$359	3%
Cirrhosis	\$336	\$351	4%
Peptic Ulcer	\$12	\$8	-33%
Sensory	\$18	\$13	-28%
Otitis Media	\$18	\$13	-28%

\*Adjusted to 2019 dollars

**eFigure 1. Burden of Disease and NIH Funding 1996 and 2019**

FIGURE S1A: NIH Funding and Burden of Disease (1996)

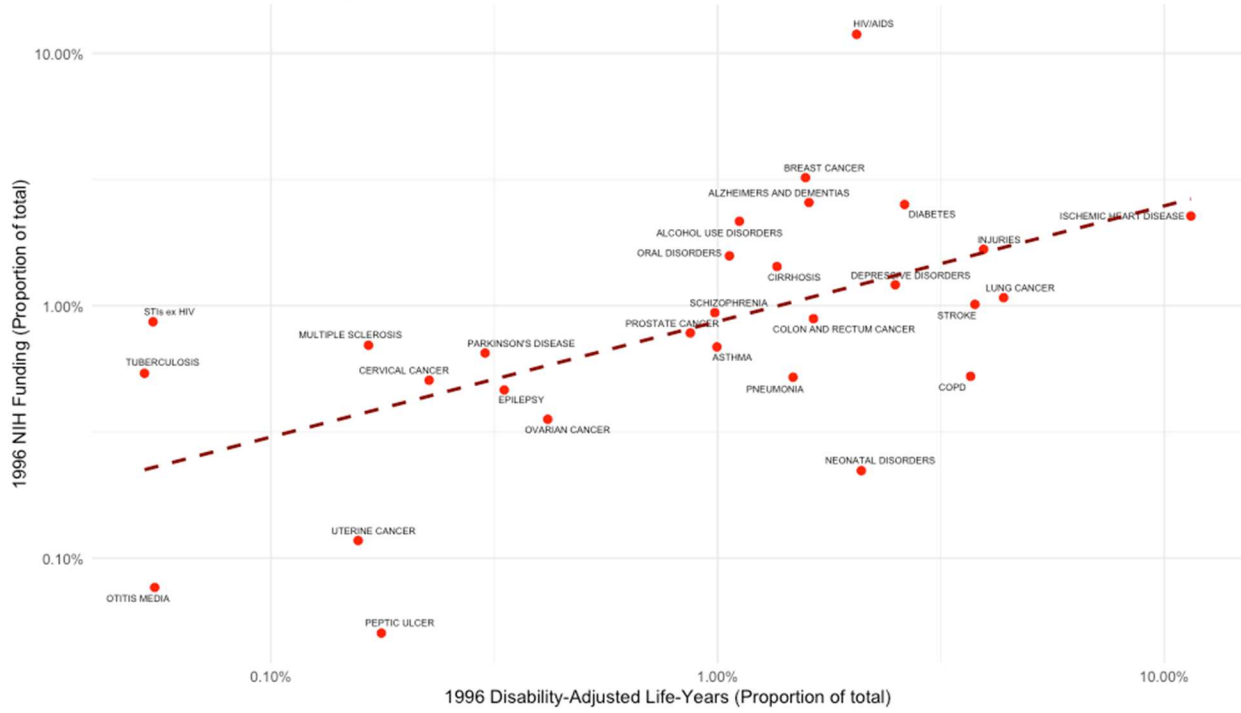
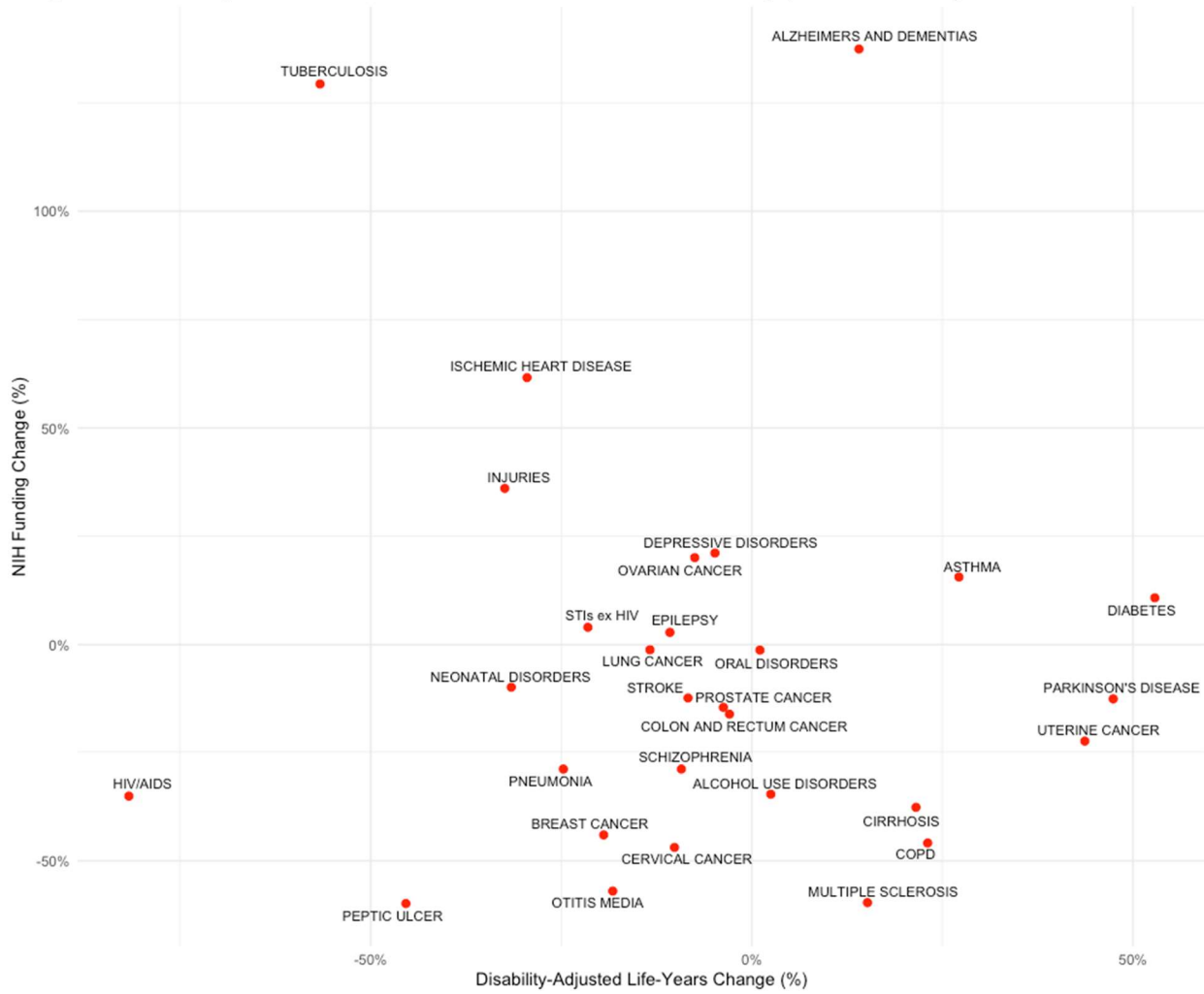


FIGURE S1B: NIH Funding and Burden of Disease (2019)



**eFigure 2.** Changes in Burden of Disease and NIH Funding (1996 - 2019)



Linear OLS suggests  $R^2 < 0.01$  and coefficient of DALY to be not statistically significant ( $p \sim 0.81$ )

**eTable 3.** Explaining 2019 NIH Funding using change in Disease Burden and 2008 NIH Funding

	(1)
VARIABLES	Model1
2008 NIH Funding	0.946*** (0.0537)
Change in DALY	0.662 (0.439)
Observations	46
R-squared	0.884

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**eTable 4.** Explaining 2019 NIH Funding for 29 Diseases

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Model1	Model2	Model3	Model4	Model5
2019 DALY	0.463*** (0.147)				-0.0691 (0.309)
2008 DALY		0.563*** (0.144)			0.281 (0.332)
2016 Health Spend			0.318** (0.153)		-0.133 (0.104)
2008 NIH Funding				1.046*** (0.106)	0.973*** (0.137)
Observations	29	29	29	29	29
R-squared	0.268	0.362	0.139	0.782	0.810

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Coefficients should be interpreted as elasticities. For example, in Model 1, the coefficient for 2019 DALYs should be interpreted as a 1% increase in 2019 DALYs yields a 0.463% in 2019 NIH Spending. Constants are excluded.

**eFigure 3.** Correlation between 2008 and 2019 Institutes and Centers Funding  
 NIH Institute and Center Funding 2008 to 2019

