6° CONGRESO ARGENTINO de Nutrición Pediátrica

Mesa Redonda: Soporte nutricional en la enfermedad

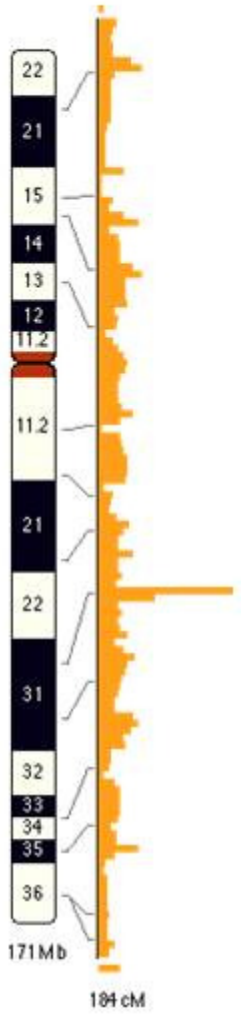
Fibrosis quística en Argentina

Dra. Adriana Fernández
Servicio de Nutrición
Hospital de Niños de La Plata

Objetivos

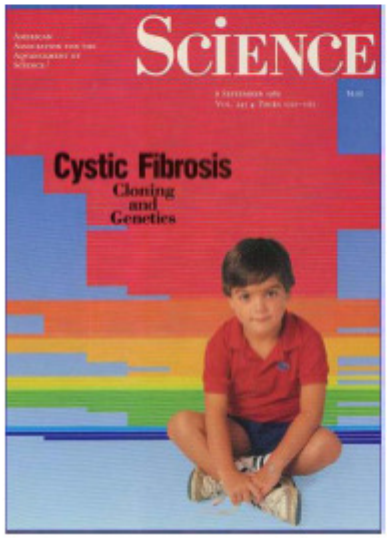
- Impacto de la pesquisa neonatal
- Factores que influencian la sobrevida
- Importancia de la intervención precoz
- El acceso a la salud
- Nuevas terapias

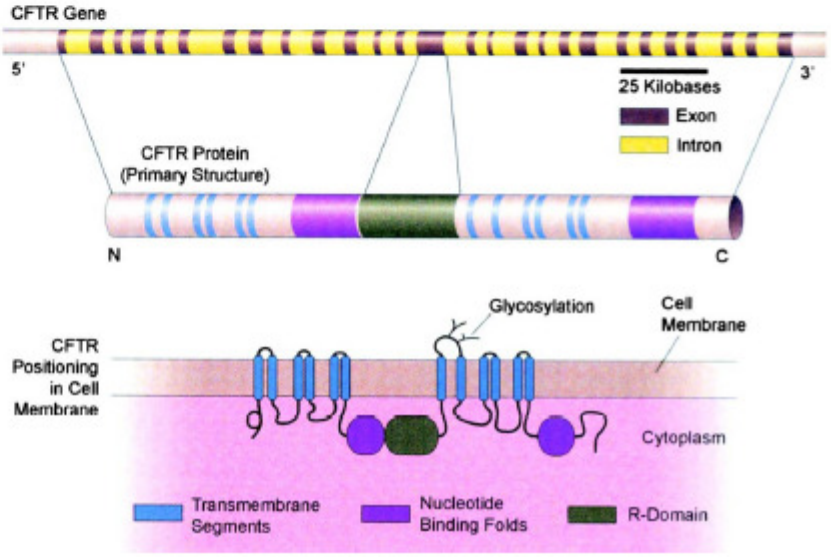
Descubrimiento del gen asociado a la FQ, agosto, 1985



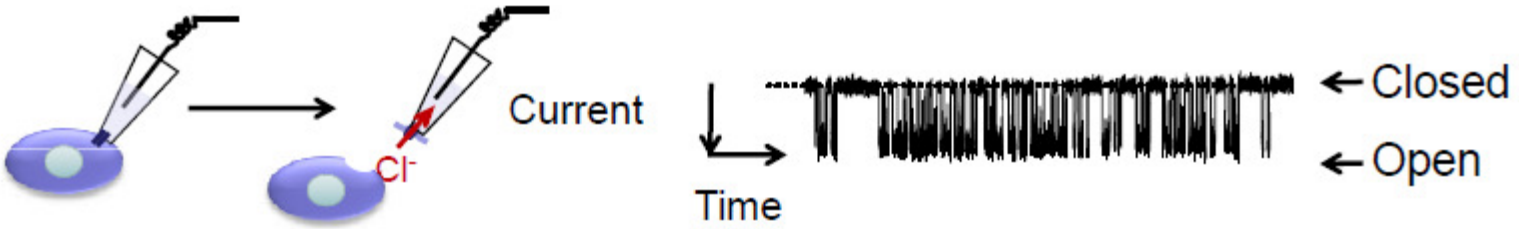
Lap-Chee Tsui, Collins y Rommens

Avances en el conocimiento del defecto CFTR en la Fibrosis Quística



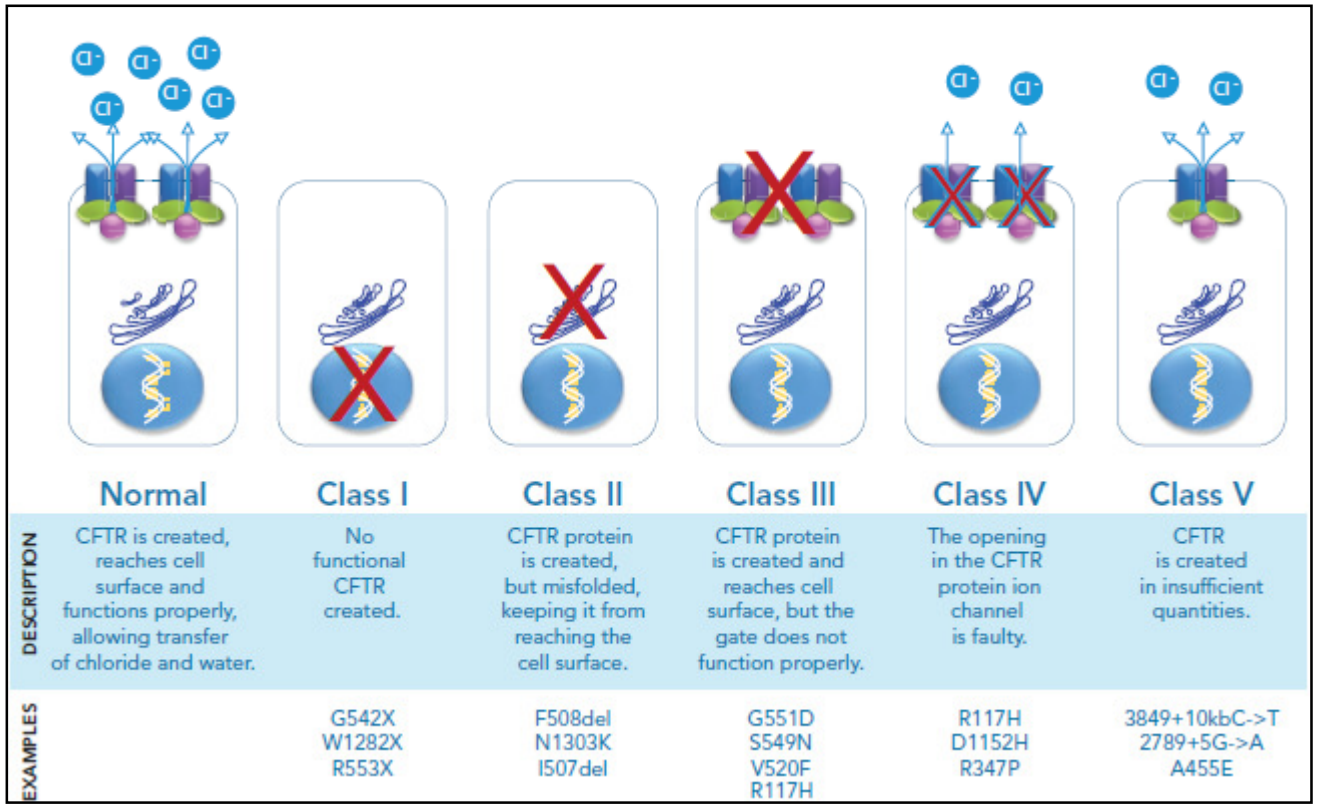


Gibson RL et al., Am J Respir Crit Care Med 2003



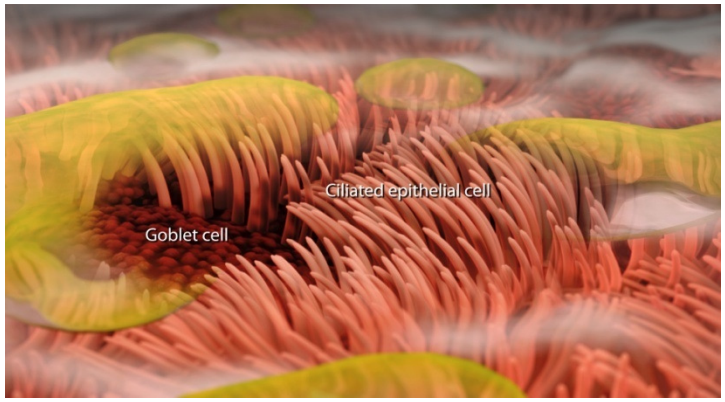
CYSTIC FIBROSIS FOUNDATION
ADDING TOMORROWS

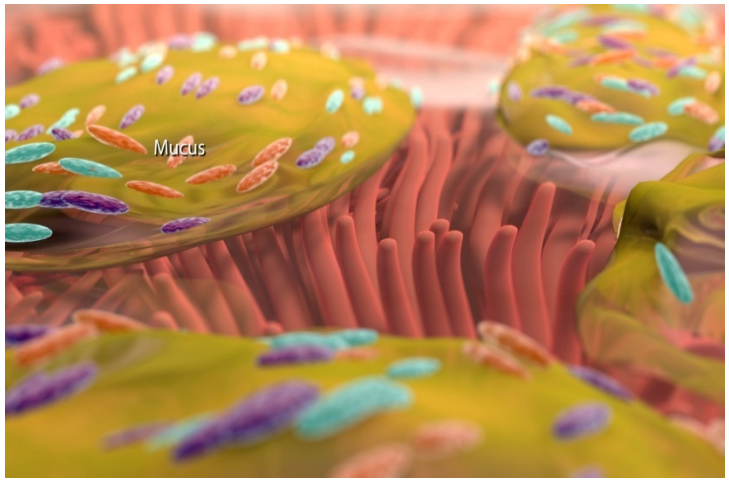
Defectos del CFTR

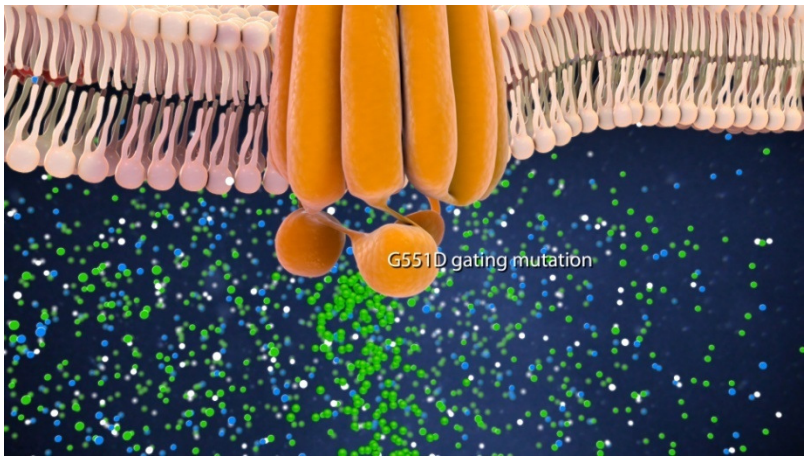


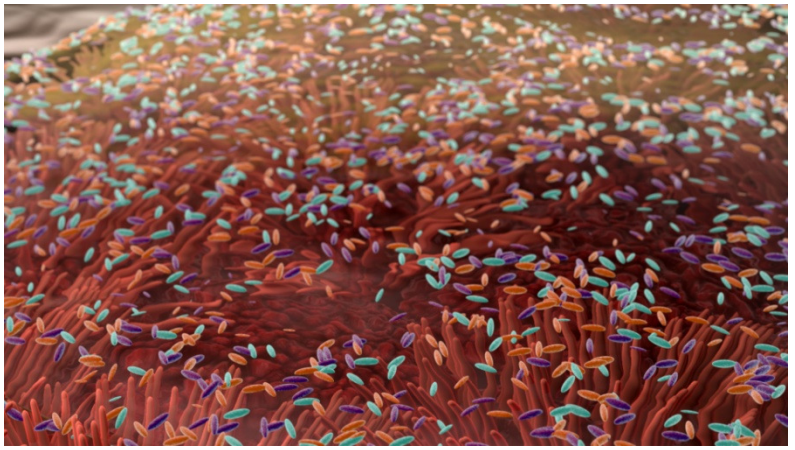
	Normal	Class I	Class II	Class III	Class IV	Class V
DESCRIPTION	CFTR is created, reaches cell surface and functions properly, allowing transfer of chloride and water.	No functional CFTR created.	CFTR protein is created, but misfolded, keeping it from reaching the cell surface.	CFTR protein is created and reaches cell surface, but the gate does not function properly.	The opening in the CFTR protein ion channel is faulty.	CFTR is created in insufficient quantities.
EXAMPLES		G542X W1282X R553X	F508del N1303K I507del	G551D S549N V520F R117H	R117H D1152H R347P	3849+10kbC->T 2789+5G->A A455E

DEFECTO DEL CFTR

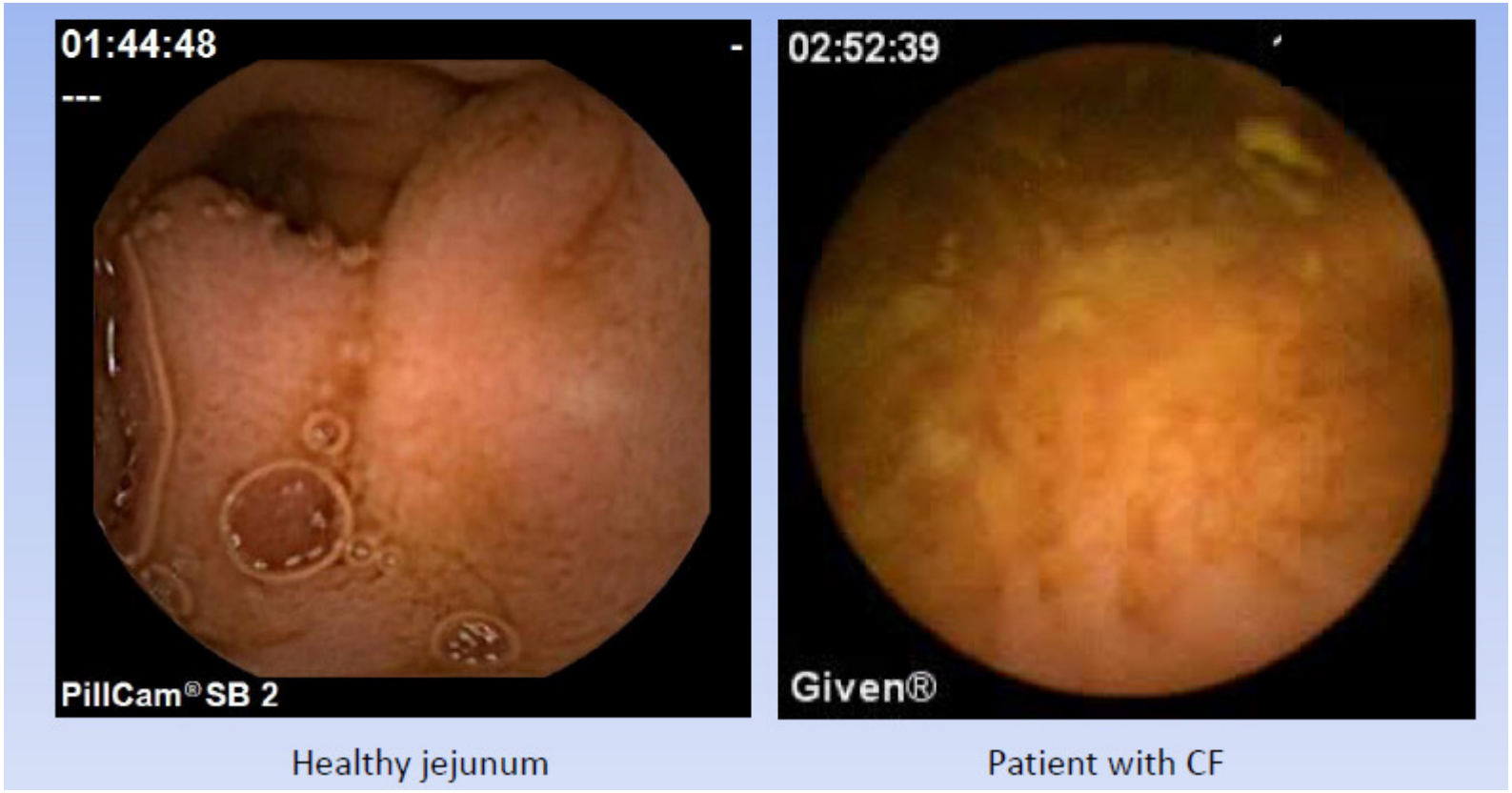








Alteraciones similares entre el tracto gastrointestinal y la vía aérea

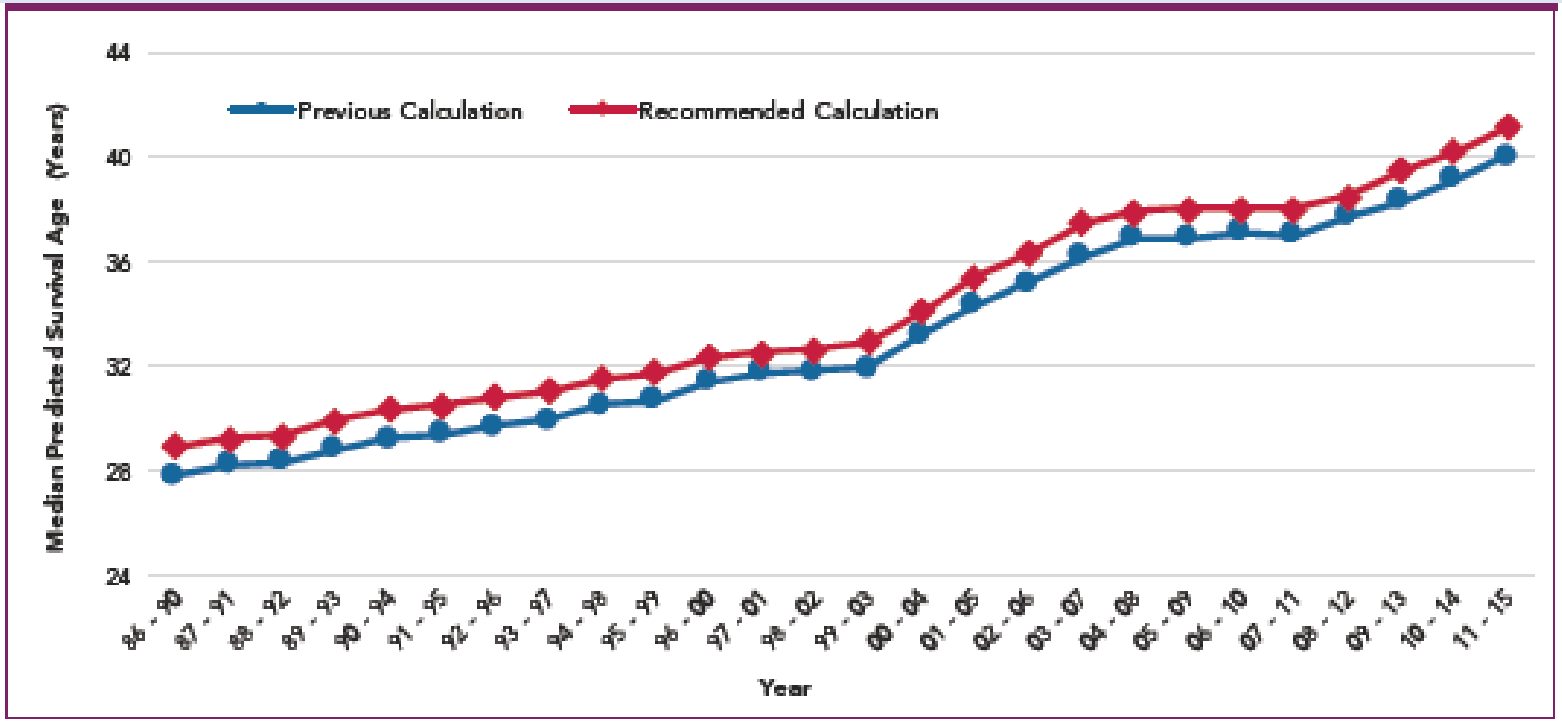


NATURE Vol 460 9 Jul 2009

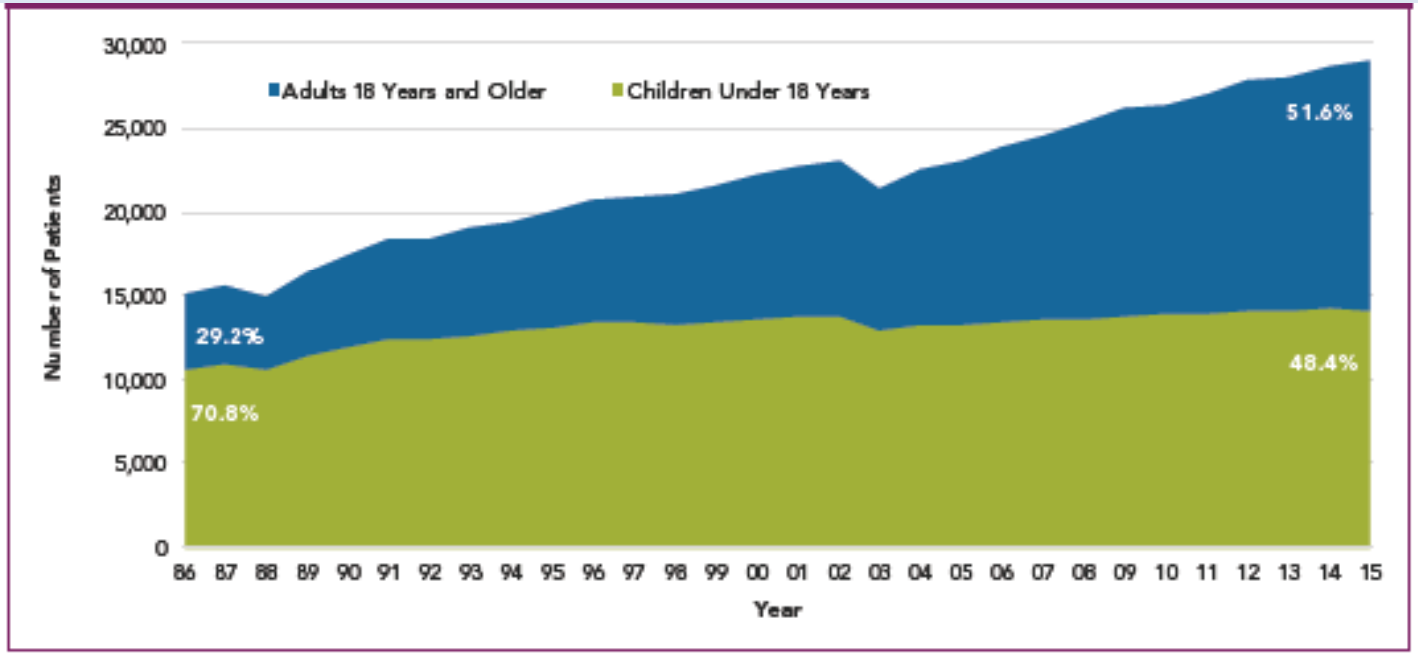
ONE GENE, TWENTY YEARS

When the cystic fibrosis gene was found in 1989, therapy seemed around the corner. Two decades on, biologists still have a long way to go, finds **Helen Pearson**.

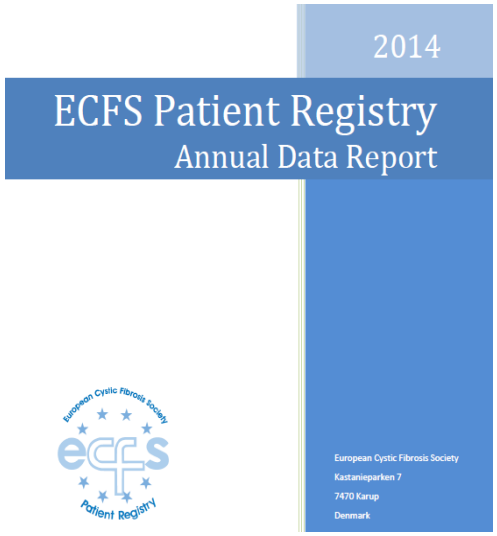
Sobrevida media, años 1986-2015 CFF

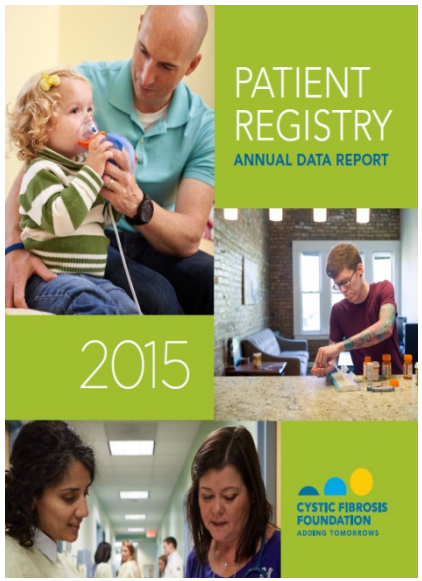


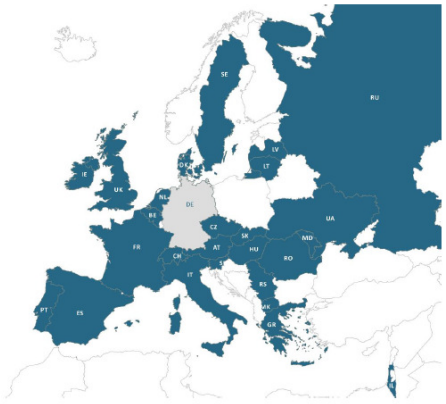
Número de pacientes adultos/pediátricos 1986-2015



The decrease in the number of individuals in 2003 is due to a delay in obtaining informed consent forms before the close of the calendar year at some CF care centers.







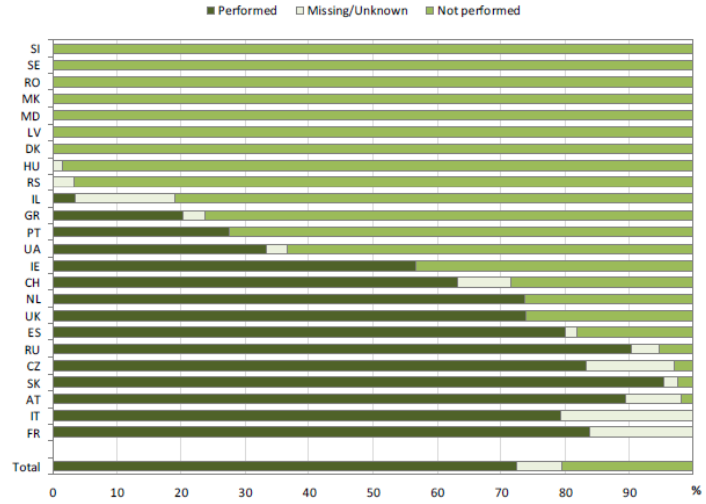
Countries that contributed 2014 data are in blue.
Germany, who will send these data at the end of 2016, is in grey.

Fibrosis Quística: Diagnóstico

	Europa	USA	Canadá	Argentina
Población (millones aprox.)	740	320	35	42
FQ en Registros	35582	28583	4108	1049
Diag. por pesquisa	75% < 5 años	59.6%	43.3%	32.6%
Delta f508	81.6%	86,4%	89.7%	73.1%
Edad de diag.	Media 4.1 a Mediana 3.6m	Media 3,8 a Mediana 4m	68.8% < 1 año	63.3% < 1año

Pesquisa neonatal

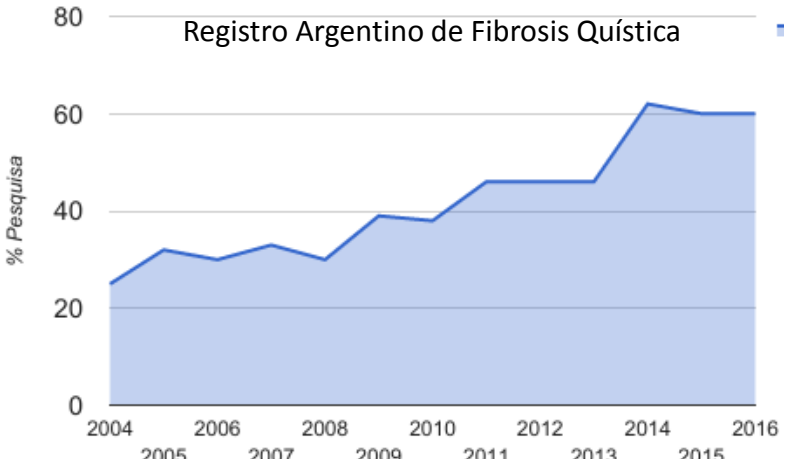
Figure 2.3 Proportion of patients who underwent neonatal screening, by country and overall. Patients 5 years old or younger seen in 2014.



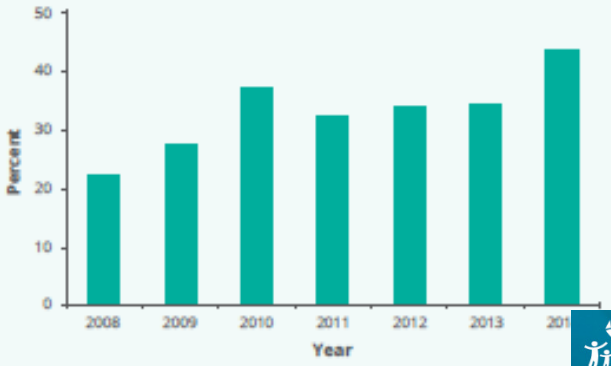
Note: For Czech Republic, Israel and Italy the information on neonatal screening is missing for more than 10% of the patients.
Czech Republic: positive answers ("neonatal screening performed") are reported when neonatal screening is one of the factors that led to CF diagnosis.
France: neonatal screening is recorded only if it is part of the diagnosis.
United Kingdom: new born screening has been introduced for all babies born across the UK since 2007. The data above indicate that the CF diagnosis was suggested by neonatal screening.

Porcentajes de casos nuevos diagnosticados por pesquisa

Registro Argentino de Fibrosis Quística



Proportion of all new diagnoses made through the NBS program, 2008 to 2014



Cystic Fibrosis Canada

EVALUACIÓN CLÍNICA-FUNCIONAL DE NIÑOS CON FIBROSIS QUÍSTICA (FQ) DETECTADOS POR PESQUISA NEONATAL O POR SÍNTOMAS CLÍNICOS: CUATRO AÑOS DE SEGUIMIENTO

		2005			2006			2007			2008	
	z IMC	z T/E*	VEF_1	z IMC*	z T/E*	VEF_1	z IMC	z T/E*	VEF_1	z IMC	z T/E	VEF_{1*}
P	0,18	-0,21	96%	0,44	-0,28	86%	0,12	0,07	95%	-0,07	0,06	93%
S	-0,17	-0,95	88%	-0,50	-1,01	76%	-0,50	-0,80	83%	-0,45	-0,80	76%

**P 0.05*

Variables	Grupo P	Grupo S	p
Edad al diagnóstico (años)	0,16 ± 0,13	1,03 ± 1,23	0,002
Edad derivación (años)	0,98 ± 1,69	1,28 ± 1,25	0,5

Arch Argent Pediatr 2009;107(5):430-435

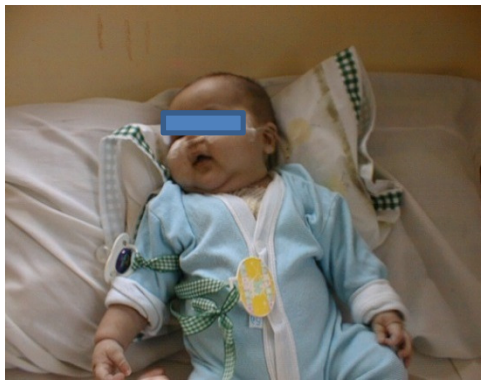
Beneficios de la Pesquisa Neonatal

Mortalidad: **disminución de la mortalidad temprana**

(<5 a. 4/59 vs. 0/74)

Tratamiento especializado precoz

Evitar complicaciones tempranas
(s. pérdida salina/edema-anemia-hipoproteinemia)

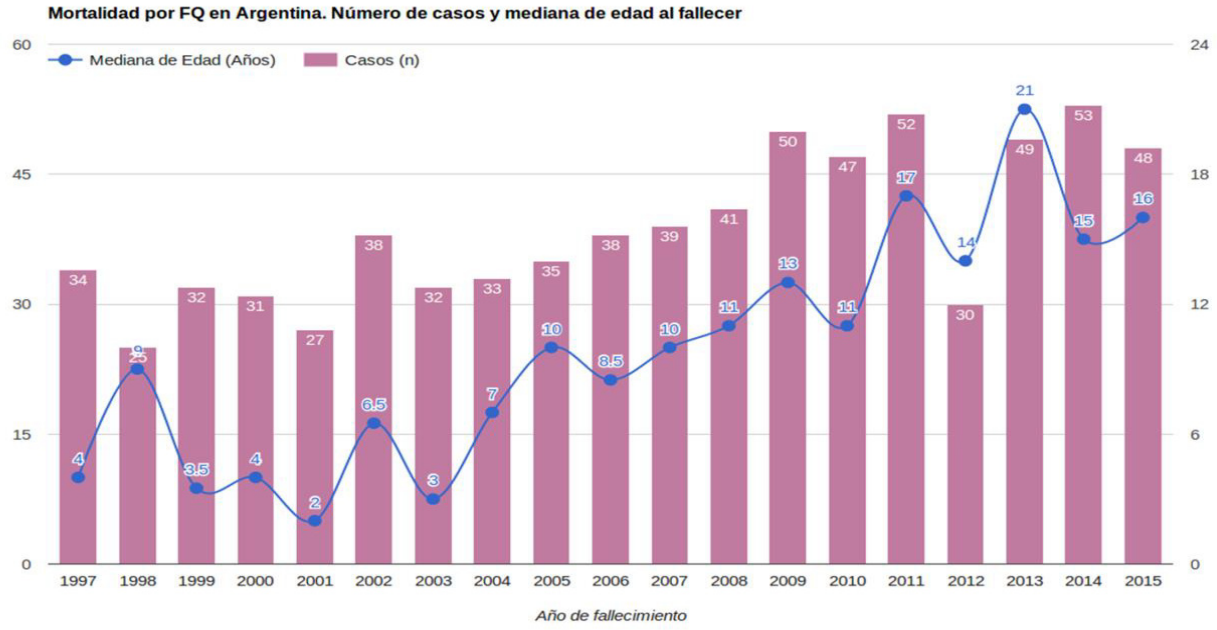


Newborn screening for cystic fibrosis: evidence for benefit
Arch. Dis. Child. 2008;93;7-10

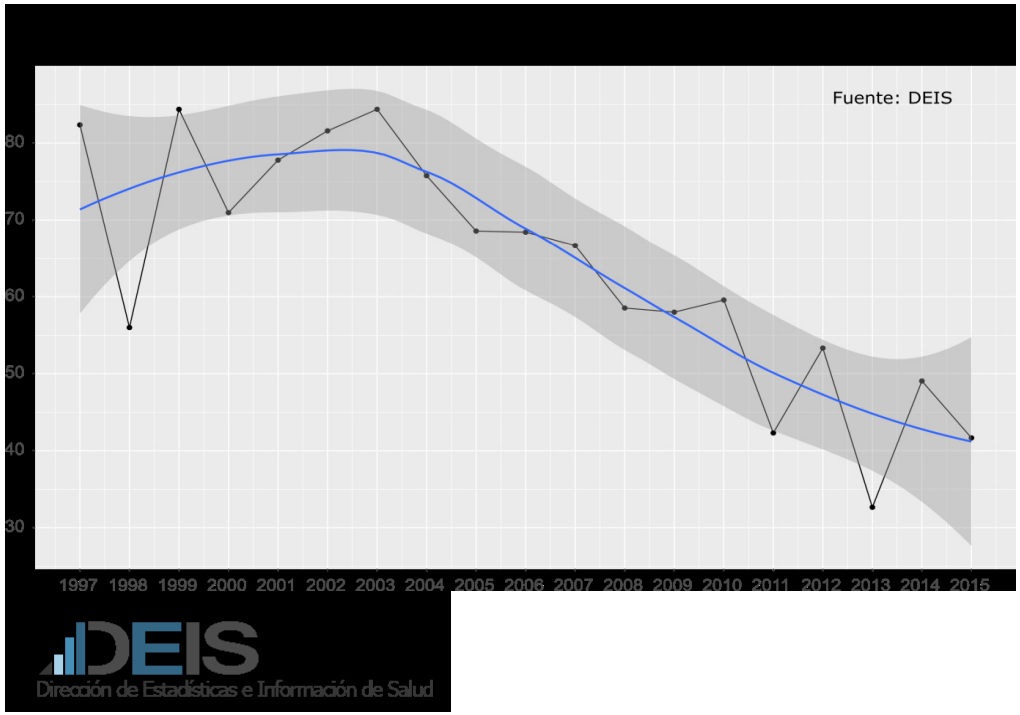
Edad de fallecimiento/ Sobrevida

	Europa	USA	Canadá	Argentina
Edad M fallecimiento	28.7 a	30.1 a	32.4 a	*
Sobrevida media esperada		41.6 a	51.8 a	*

*



Mortalidad por Fibrosis Quística. Años 1997-2015. Porcentaje menores de 15 años



- **Acceso a tratamiento por interdisciplina**
- **Tratamiento temprano de la enf. pulmonar**
- **Abordaje de la malnutrición**

George PM, 2011; Yen EH, 2013; MacKenzie T, 2014.

Annals of Internal Medicine

ORIGINAL RESEARCH

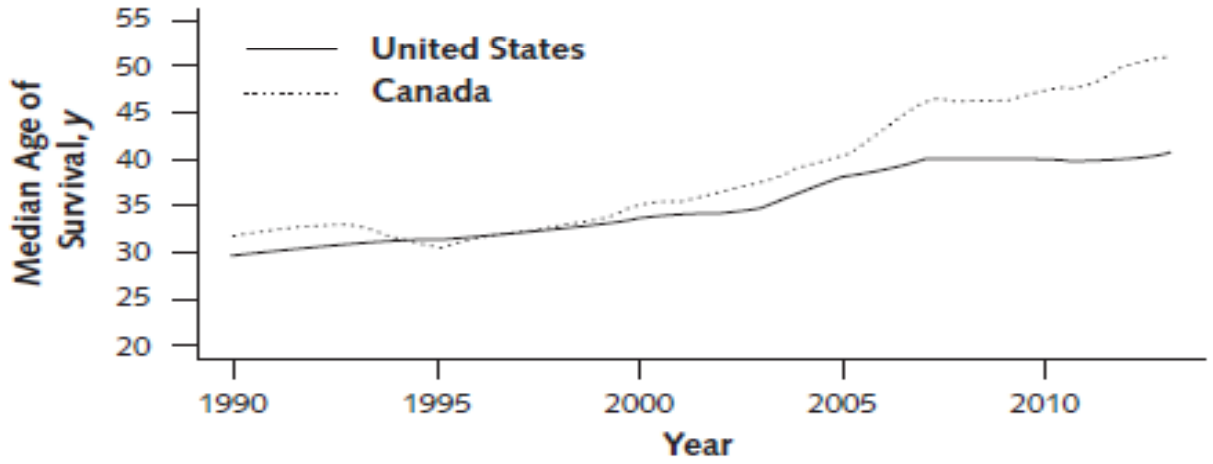
Survival Comparison of Patients With Cystic Fibrosis in Canada and the United States

A Population-Based Cohort Study

Ann Intern Med. doi:10.7326/M16-0858

Anne L. Stephenson, MD, PhD; Jenna Sykes, MMath; Sanja Stanojevic, PhD; Bradley S. Quon, MD, MSc; Bruce C. Marshall, MD; Kristofer Petren, BA, BSc; Josh Ostrenga, MSc; Aliza K. Fink, DSc; Alexander Elbert, PhD; and Christopher H. Goss, MD, MSc

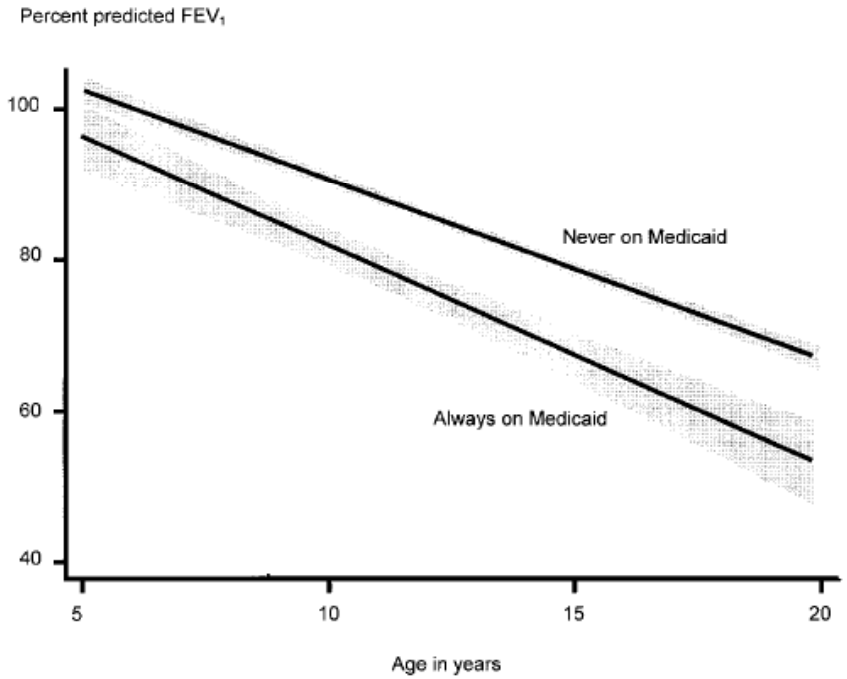
Median age of survival over time.

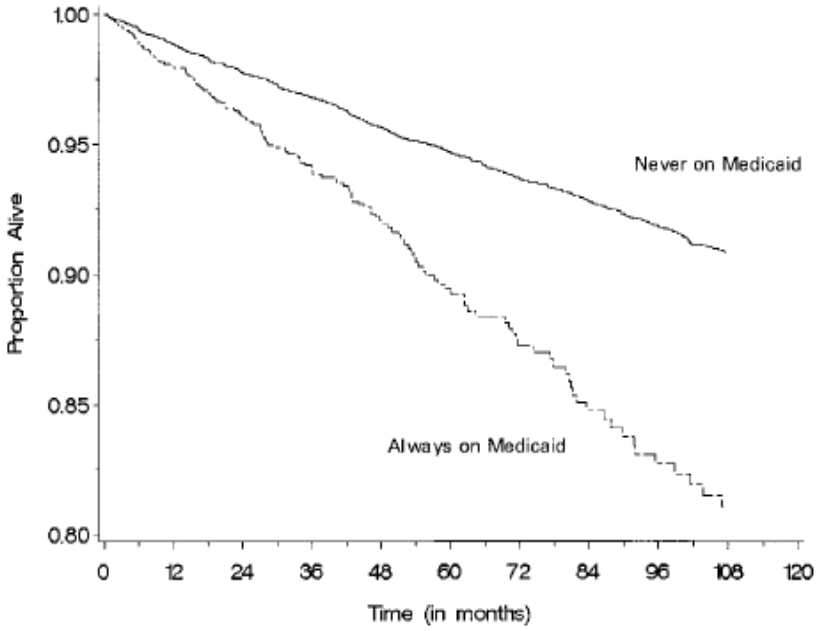


"The reasons for the survival gap is definitely multifactorial and not based on one factor alone…We hypothesize that three factors may be playing a role in the survival gap: lung transplantation; differences in the two health care systems; the differential approach to nutrition in the 1970s that started first in Canada," Anne Stephenson

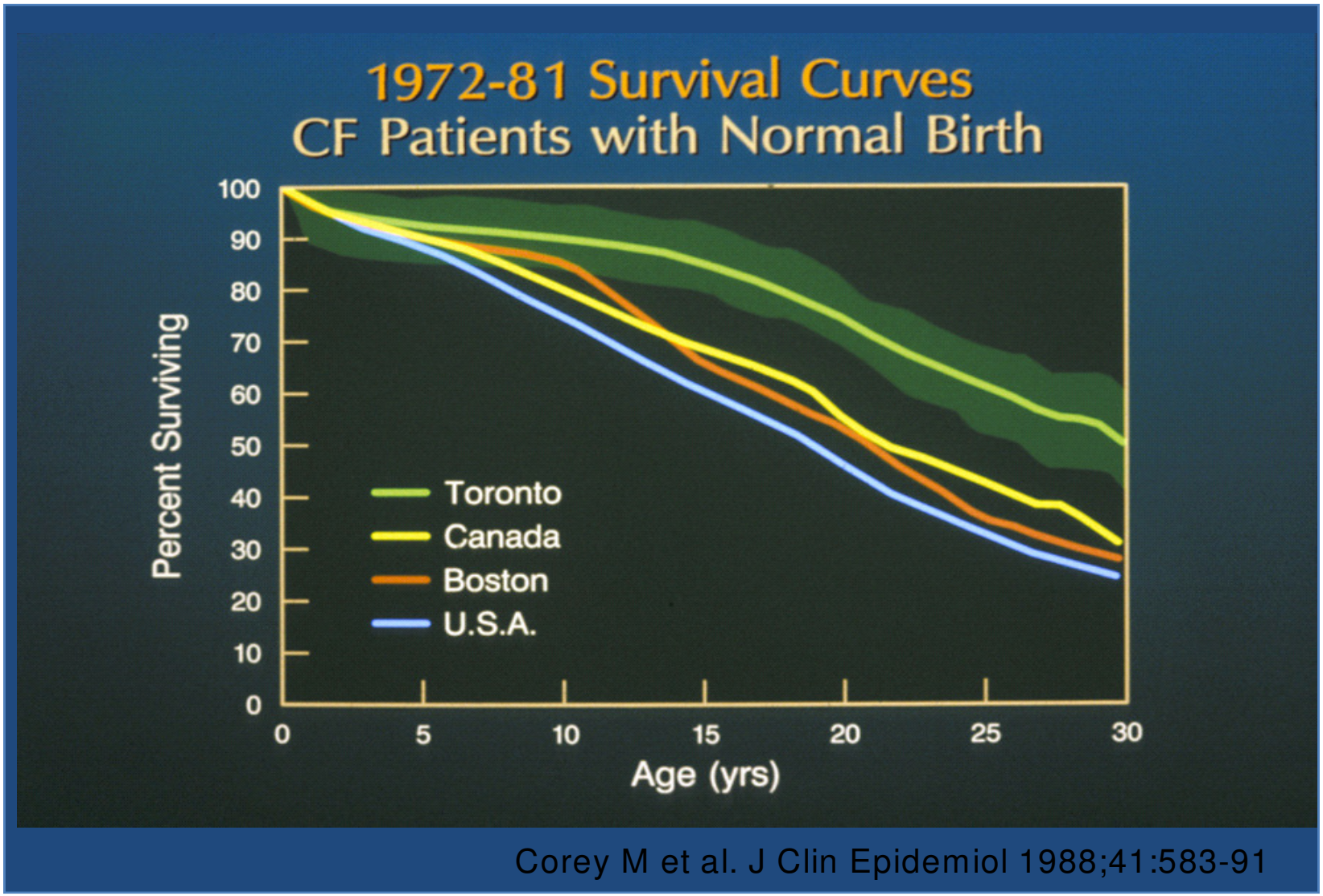
The Association of Socioeconomic Status with Outcomes in Cystic Fibrosis Patients in the United States

MICHAEL S. SCHECHTER, BRENT J. SHELTON, PETER A. MARGOLIS, and STACEY C. FITZSIMMONS



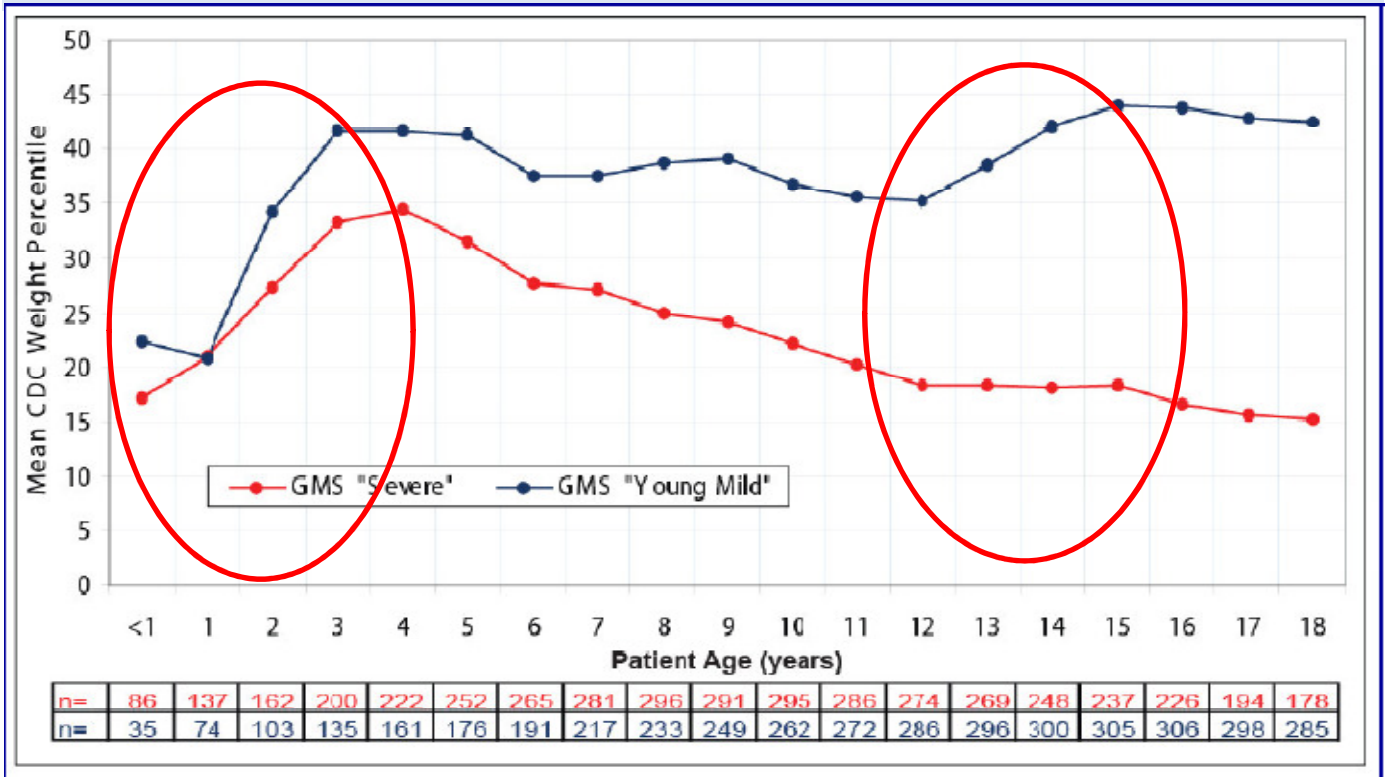


Am J Respir Crit Care Med Vol 163. pp 1331–1337, 2001



Corey M et al. J Clin Epidemiol 1988;41:583-91

FIBROSIS QUÍSTICA



n=	86	137	162	200	222	252	265	281	296	291	295	286	274	269	248	237	226	194	178
n=	35	74	103	135	161	176	191	217	233	249	262	272	286	296	300	305	306	298	285

Intervenciones Nutricionales
Educación-Dieta
Conducta Alimentaria
Nutrición Enteral

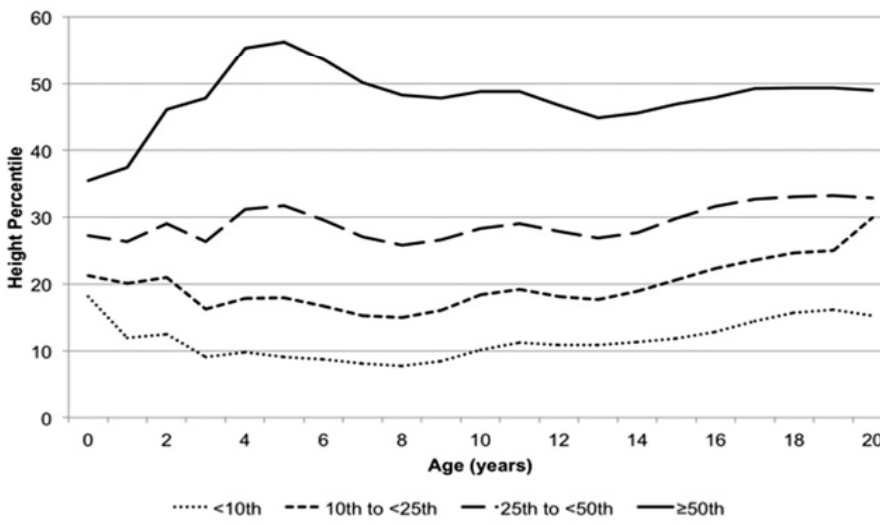
Trastornos funcionales int.
Alteraciones glucémicas
Enfermedad ósea
Trastornos psicológicos

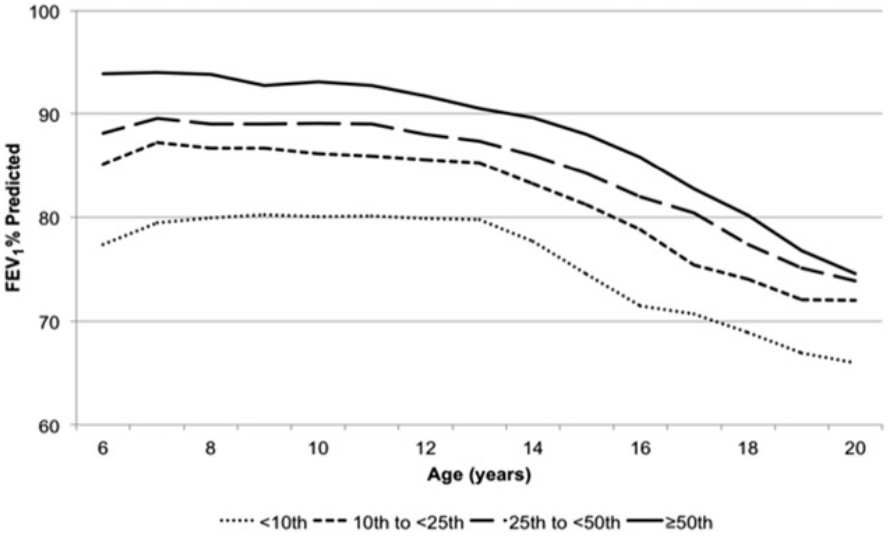
Better Nutritional Status in Early Childhood Is Associated with Improved Clinical Outcomes and Survival in Patients with Cystic Fibrosis

Elizabeth H. Yen, MD[1], Hebe Quinton, MS[2], and Drucy Borowitz, MD[3]

J Pediatr 2012

Estudio prospectivo de 3142 pacientes (CFFR)

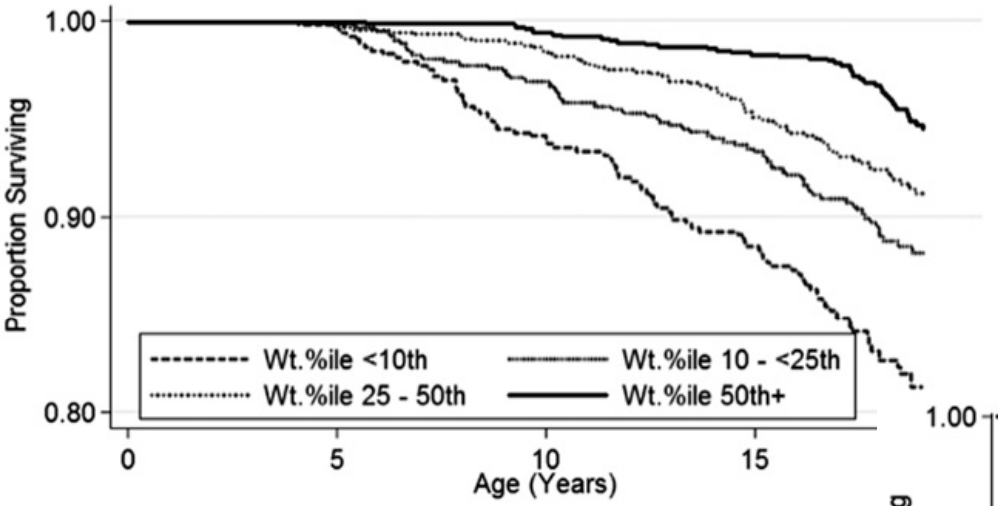


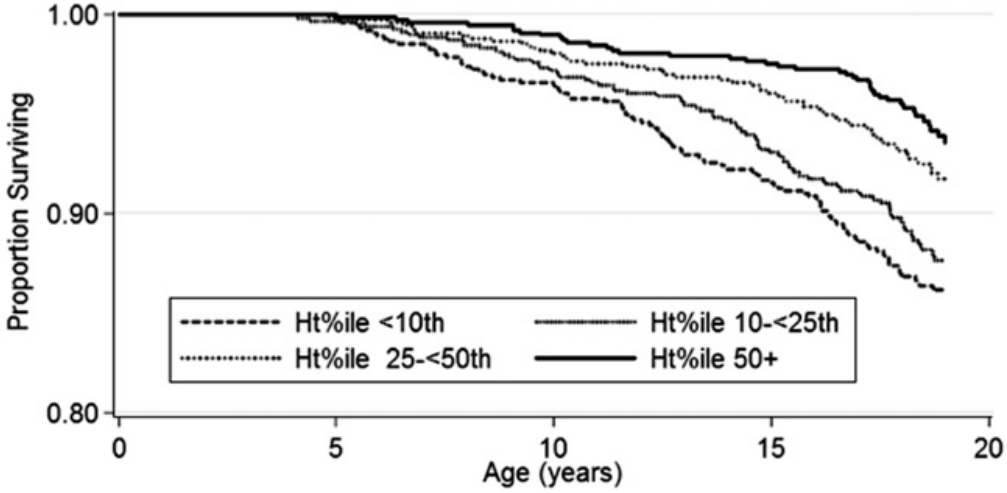


Better Nutritional Status in Early Childhood Is Associated with Improved Clinical Outcomes and Survival in Patients with Cystic Fibrosis

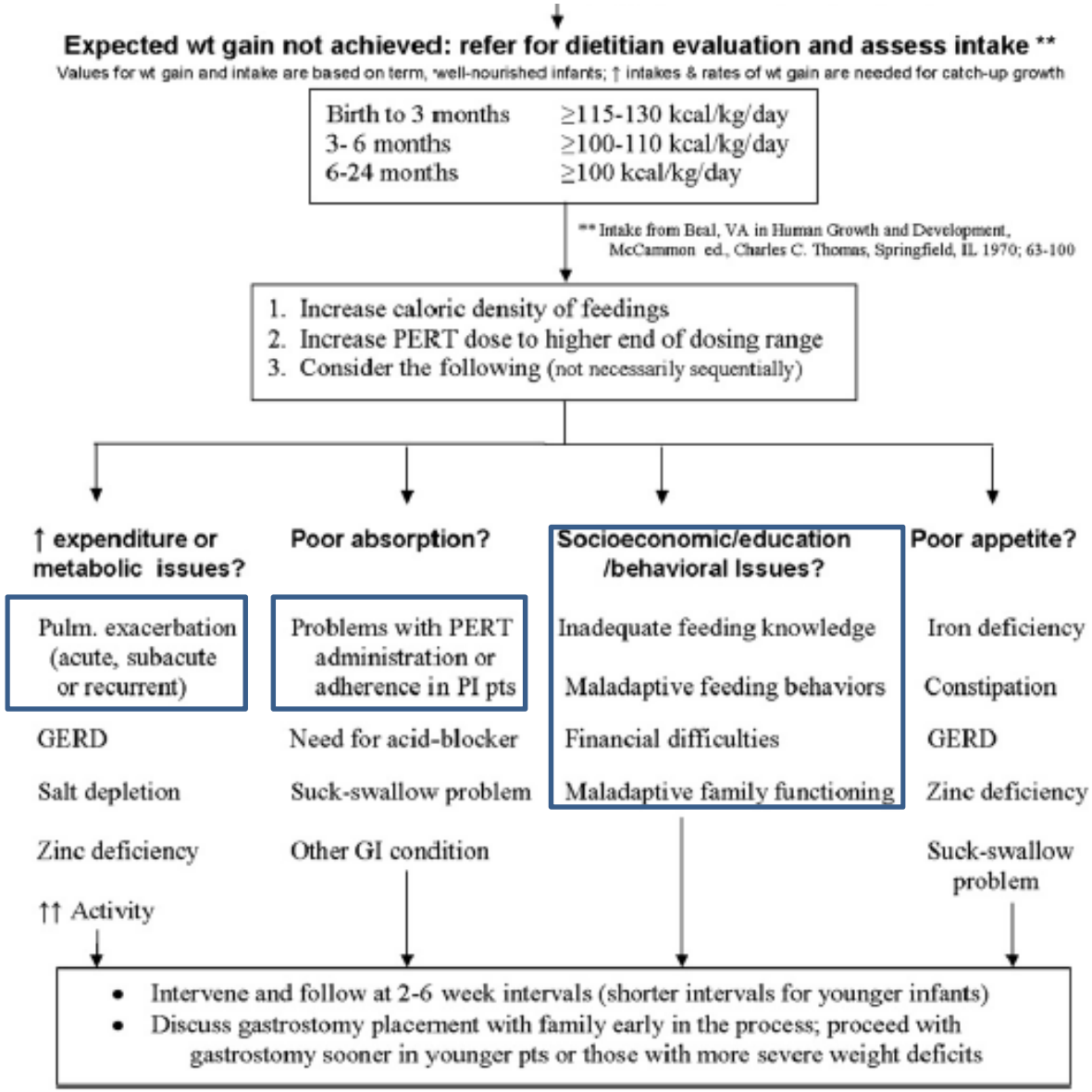
Elizabeth H. Yen, MD[1], Hebe Quinton, MS[2], and Drucy Borowitz, MD[3]

J Pediatr 2012





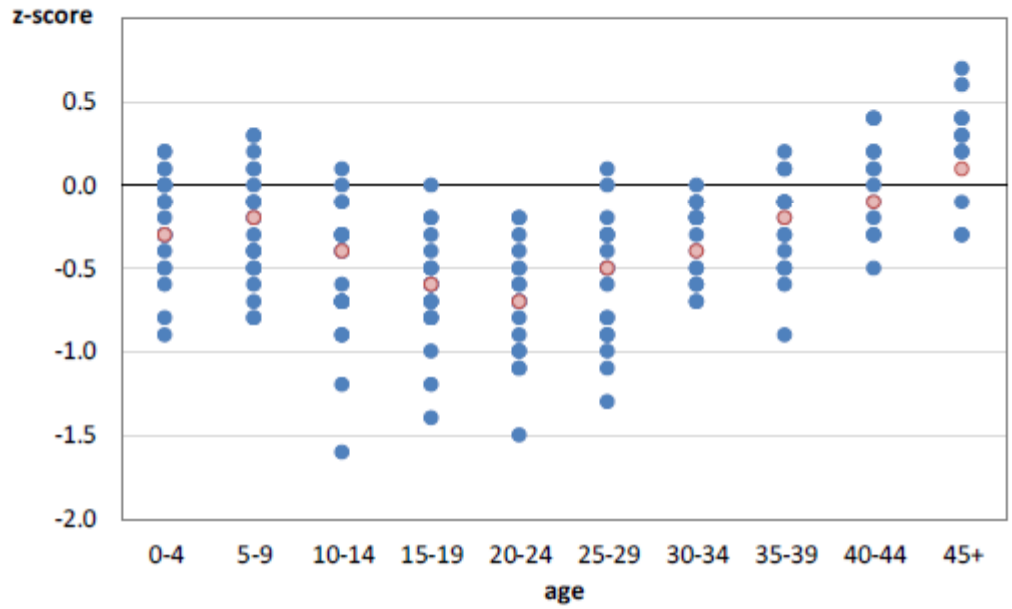
Cystic Fibrosis Foundation Evidence-Based Guidelines for Management of Infants with Cystic Fibrosis



J Pediatr 2009;155:S73-93,

Mediana de Z-score para peso, según edad y por país (2024)

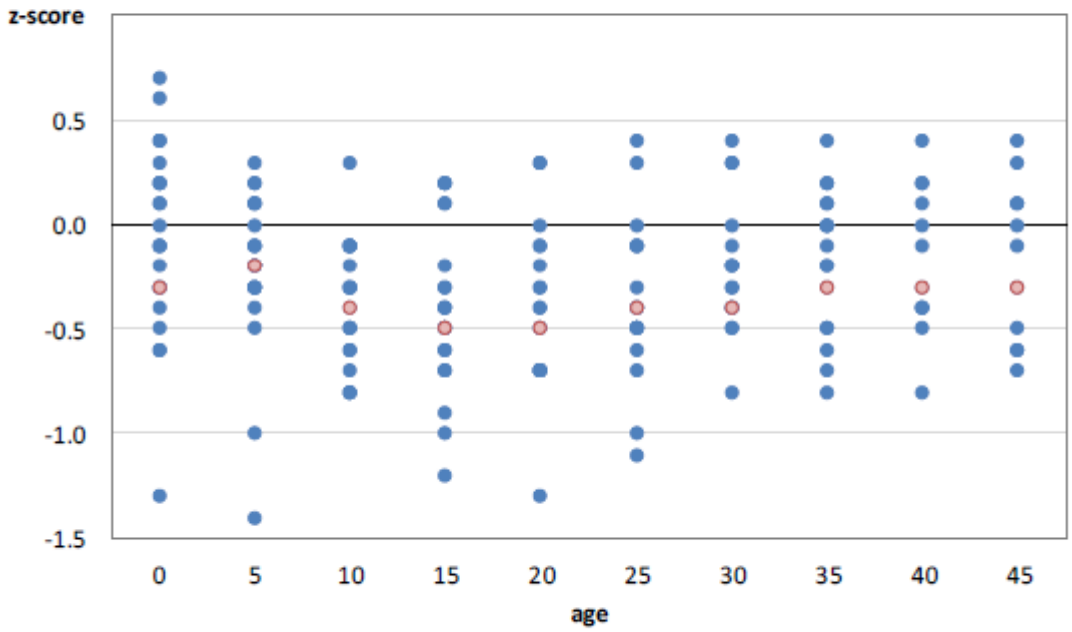
Figure 6.4 Median z-scores for weight by age group and by country. All patients seen in 2014.



Note: We excluded from the analyses those age groups where the number of patients was <10.

Mediana de Z-score para talla, según edad y por país (2024)

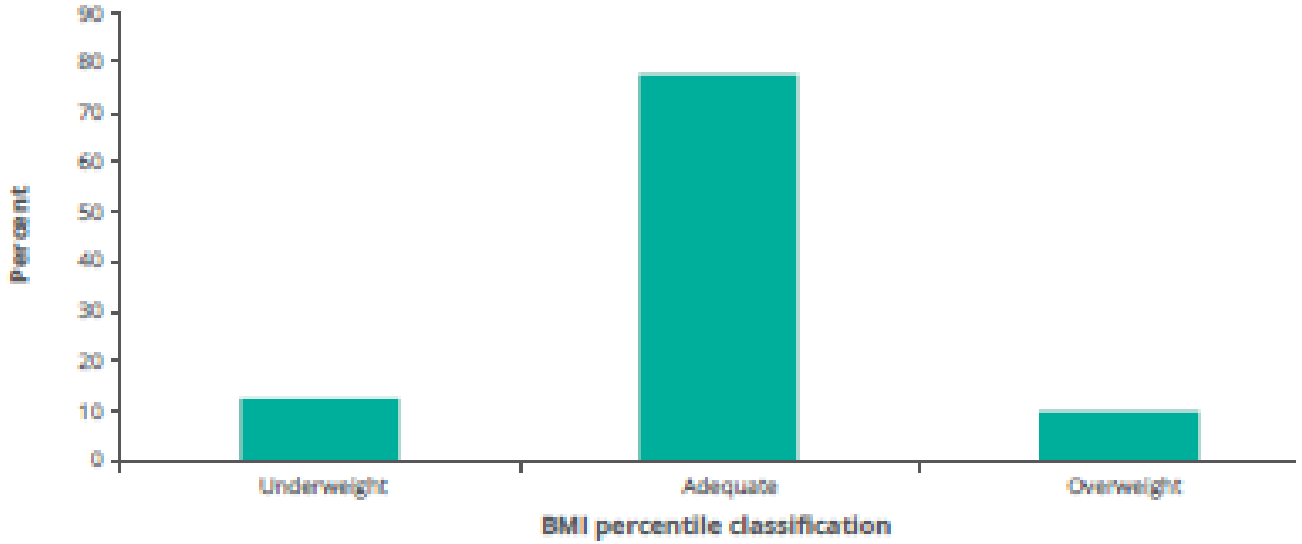
Figure 6.2 Median z-scores for height by age group and by country. All patients seen in 2014.



Note: We excluded from the analyses those age groups where the number of patients was <10.

THE CANADIAN CYSTIC FIBROSIS REGISTRY

Estado nutricional de niños según IMC, 2014



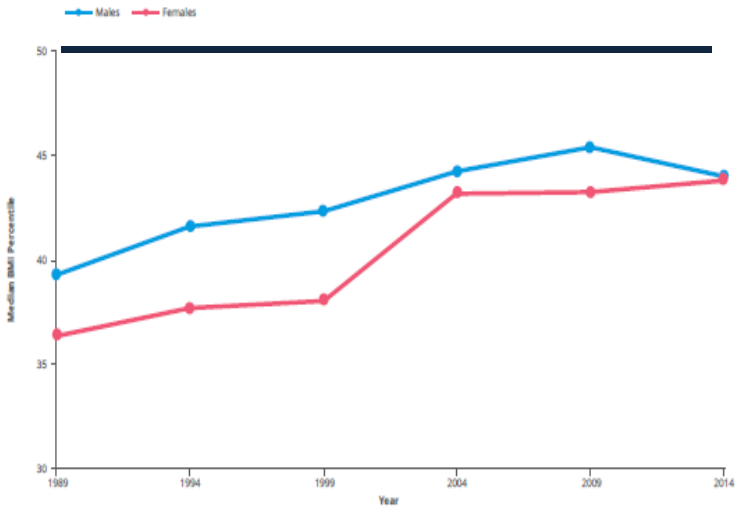
Cystic Fibrosis Canada

CYSTIC FIBROSIS FOUNDATION
ADDING TOMORROWS

THE CANADIAN CYSTIC FIBROSIS REGISTRY

Mediana de Percentiles para niños < 2 años, 1987-2015

Mediana de Percentiles para niños < 2 años, 1989-2014



RENAFQ: Datos de seguimiento anual 2011-2015/ 1049 pacientes

RENAFQ Argentina
Registro Nacional de Fibrosis Quística

Hospital de Pediatría Garrahan

Estado Nutricional de pacientes atendidos en el año 2016

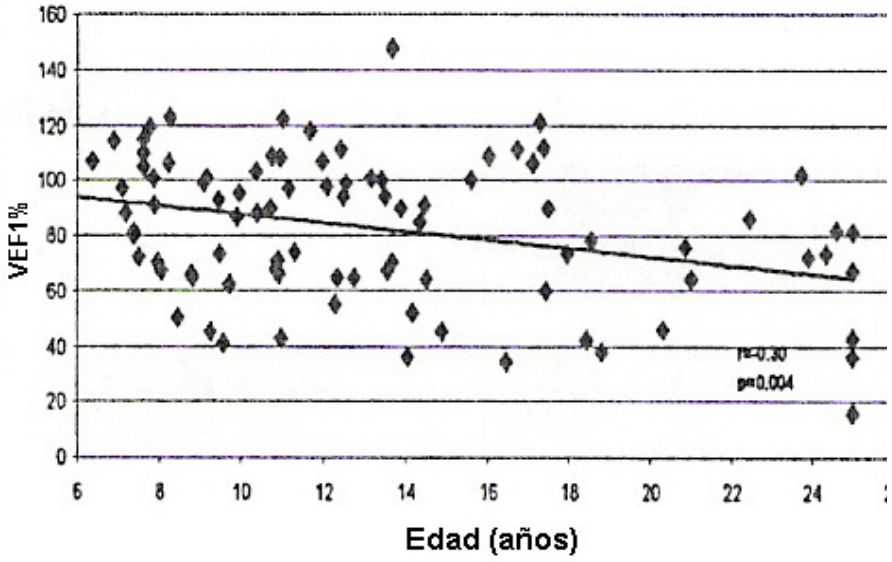
Edad	ZBMI	ZPT	Z peso	Z talla
0-2 años M DS Mínimo	 0.3012 1.5819 -2.1000	 0.1925 1.5683 -2.3400	 0.3494 1.4308 -2.9400	 0.7635 1.5956 -3.9100
2-6 años M	0.0519	-0.0218	-0.8274	-1.2630

Gentileza Dra. Araujo M.

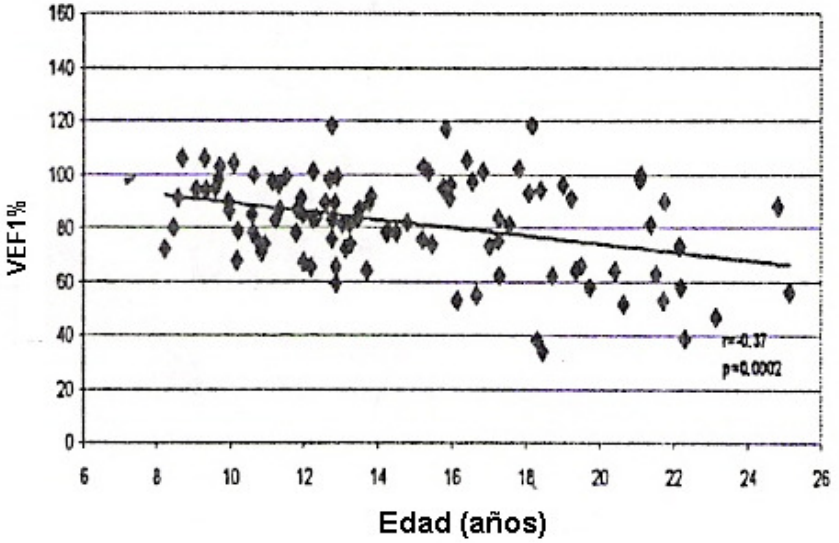
Comparación del estado nutricional y la función pulmonar entre dos centros de Fibrosis Quística
(Hospital de Niños de La Plata/ Children's Hospital Philadelphia)

The Children's Hospital *of* Philadelphia®
Hope lives here.

HNLP: VEF1 Y EDAD



CHOP: VEF1 Y EDAD



Comparación del estado nutricional y la función pulmonar entre dos centros de Fibrosis Quística
(Hospital de Niños de La Plata/ Children's Hospital Philadelphia)

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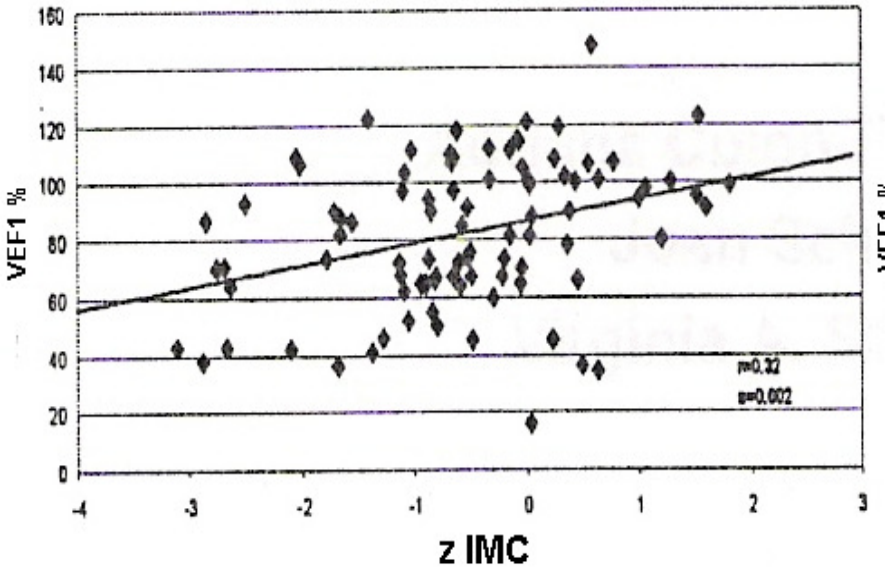
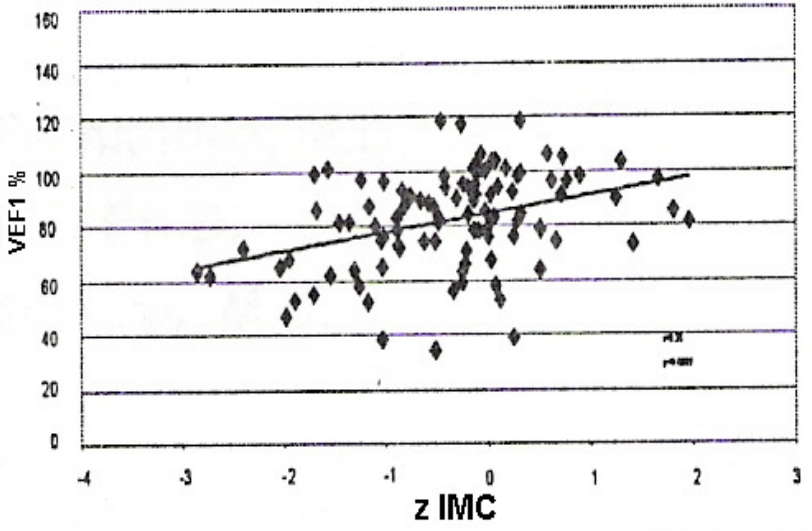
HNLP: VEF1 y z IMC

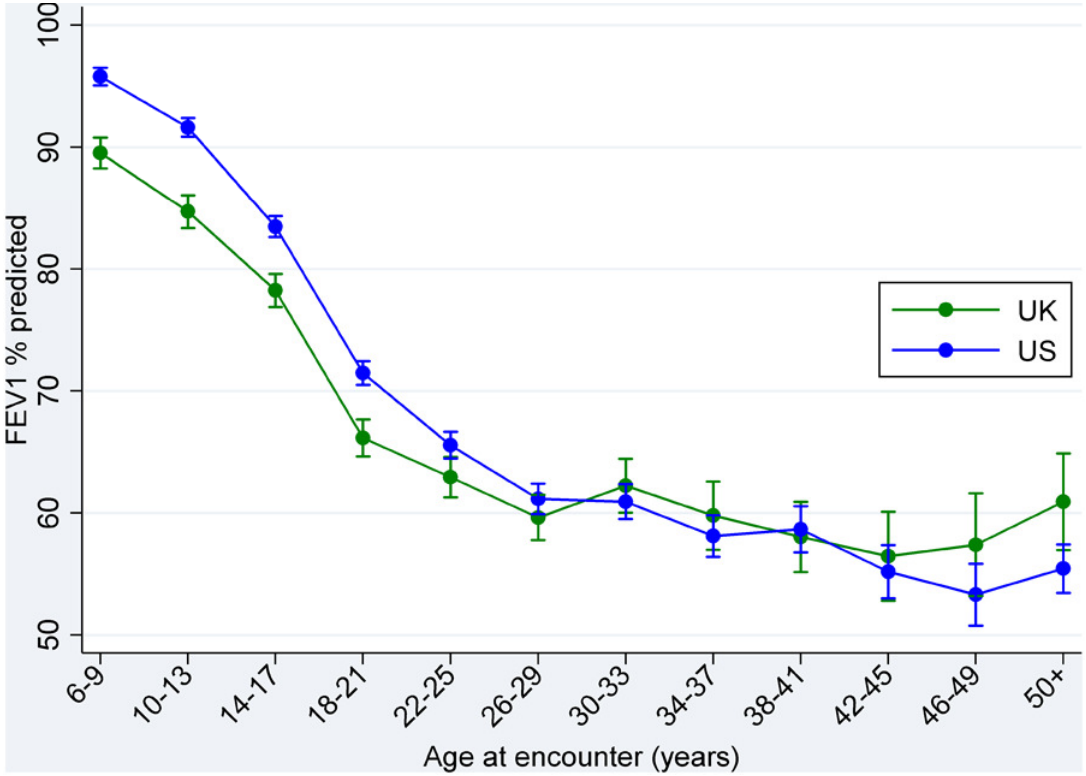


CHOP: VEF1 y z IMC



Children and young adults with CF in the US have better lung function as compared to the UK

Christopher H Goss[1], Stephanie J MacNeill[2], Hebe B Quinton[3], Bruce C Marshall[4], Alexander Elbert[4], Emily A Knapp[4], Kristofer Petren[4], Elaine Gunn[5], Joanne Osmond[5], and Diana Bilton[6]

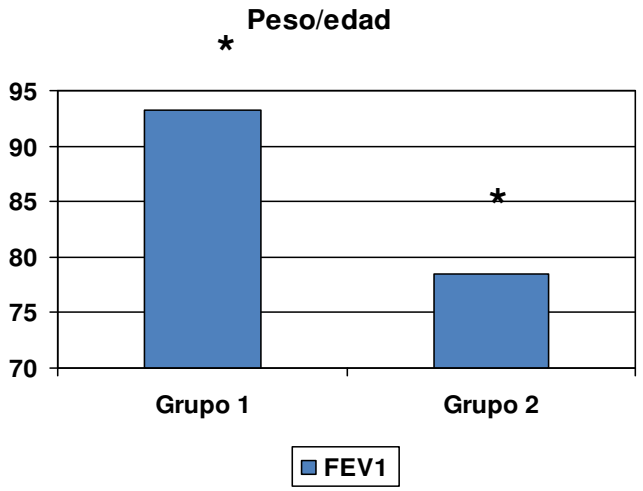


Thorax. 2015 March ; 70(3): 229–236.

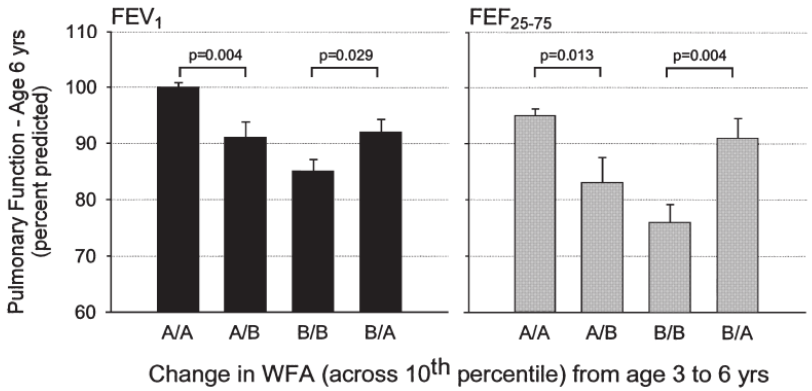
Impacto de la afectación nutricional temprana sobre la función pulmonar en pacientes con fibrosis quística

Finocchiaro, J.; Fernández, A.; Segal, E., y cols., 2008.

FEV1	Grupo 1	Grupo 2	p
P/E	93,2%	78,5%	0,006
T/E	88,5%	85%	0,3
IMC	92%	84%	0,09



* P 0,006



Konstan MW, J Ped 2003

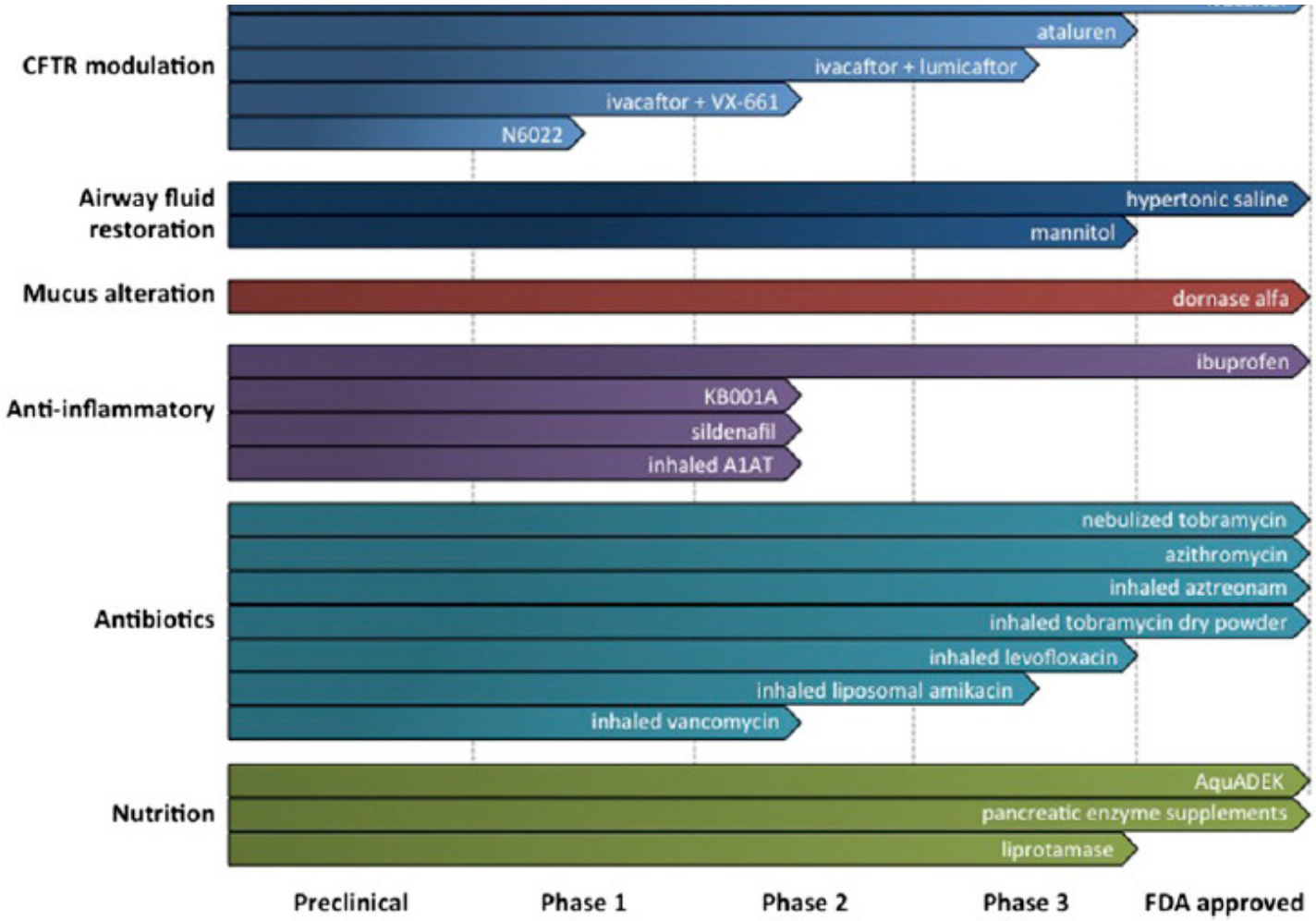
Fibrosis Quística en Argentina

- Centros interdisciplinarios de atención
- Generalizar la pesquisa neonatal
- Derivación precoz a Centros especializados
- Intervención precoz en ventanas de riesgo
- Actitud activa en las indicaciones nutricionales

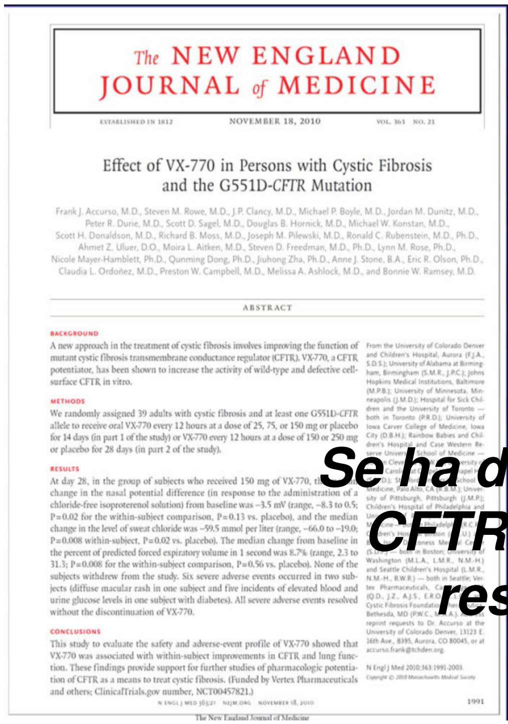
CHEST

The Evolution of Cystic Fibrosis Care

Jessica E. Pittman, MD, MPH; and Thomas W. Ferkol, MD



Avances en el tratamiento del defecto del CFTR



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 NOVEMBER 18, 2010 VOL. 363 NO. 21

Effect of VX-770 in Persons with Cystic Fibrosis and the G551D-*CFTR* Mutation

Frank J. Accurso, M.D., Steven M. Rowe, M.D., J.P. Clancy, M.D., Michael P. Boyle, M.D., Jordan M. Dunitz, M.D., Peter R. Durie, M.D., Scott D. Sagel, M.D., Douglas B. Hornick, M.D., Michael W. Konstan, M.D., Scott H. Donaldson, M.D., Richard B. Moss, M.D., Joseph M. Pilewski, M.D., Ronald C. Rubenstein, M.D., Ph.D., Ahmet Z. Uluer, D.O., Moira L. Aitken, M.D., Steven D. Freedman, M.D., Ph.D., Lynn M. Rose, Ph.D., Nicole Mayer-Hamblett, Ph.D., Qunming Dong, Ph.D., Jiuhong Zha, Ph.D., Anne J. Stone, B.A., Eric R. Olson, Ph.D., Claudia L. Ordoñez, M.D., Preston W. Campbell, M.D., Melissa A. Ashlock, M.D., and Bonnie W. Ramsey, M.D.

ABSTRACT

BACKGROUND

A new approach in the treatment of cystic fibrosis involves improving the function of mutant cystic fibrosis transmembrane conductance regulator (CFTR). VX-770, a CFTR ...

Se ha demostrado que la mejora en la función del CFTR resultó en una dramática mejoría en los resultados clínicos en pacientes con FQ

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 NOVEMBER 3, 2011 VOL. 365 NO. 18

A CFTR Potentiator in Patients with Cystic Fibrosis and the *G551D* Mutation

Bonnie W. Ramsey, M.D., Jane Davies, M.D., M.B., Ch.B., N. Gerard McElvaney, M.D., Elizabeth Tullis, M.D., Scott C. Bell, M.B., B.S., M.D., Pavel Dřevínek, M.D., Matthias Griese, M.D., Edward F. McKone, M.D., Claire E. Wainwright, M.D., M.B., B.S., Michael W. Konstan, M.D., Richard Moss, M.D., Felix Ratjen, M.D., Ph.D., Isabelle Sermet-Gaudelus, M.D., Ph.D., Steven M. Rowe, M.D., M.S.P.H., Qunming Dong, Ph.D., Sally Rodriguez, Ph.D., Karl Yen, M.D., Claudia Ordoñez, M.D., and J. Stuart Elborn, M.D., for the VX08-770-102 Study Group*

ABSTRACT

BACKGROUND

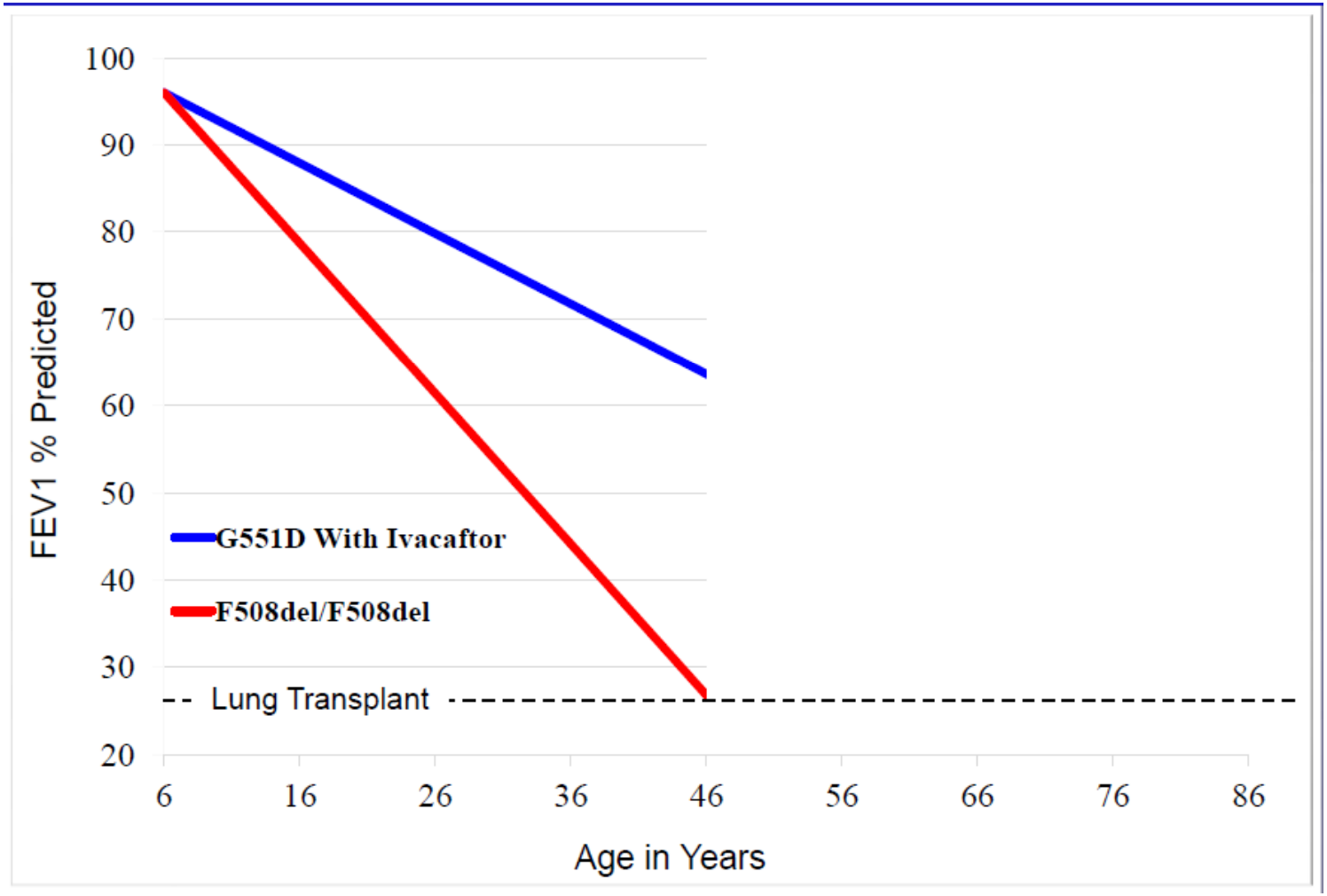
Increasing the activity of defective cystic fibrosis transmembrane conductance regulator (CFTR) protein is a potential treatment for cystic fibrosis.

METHODS

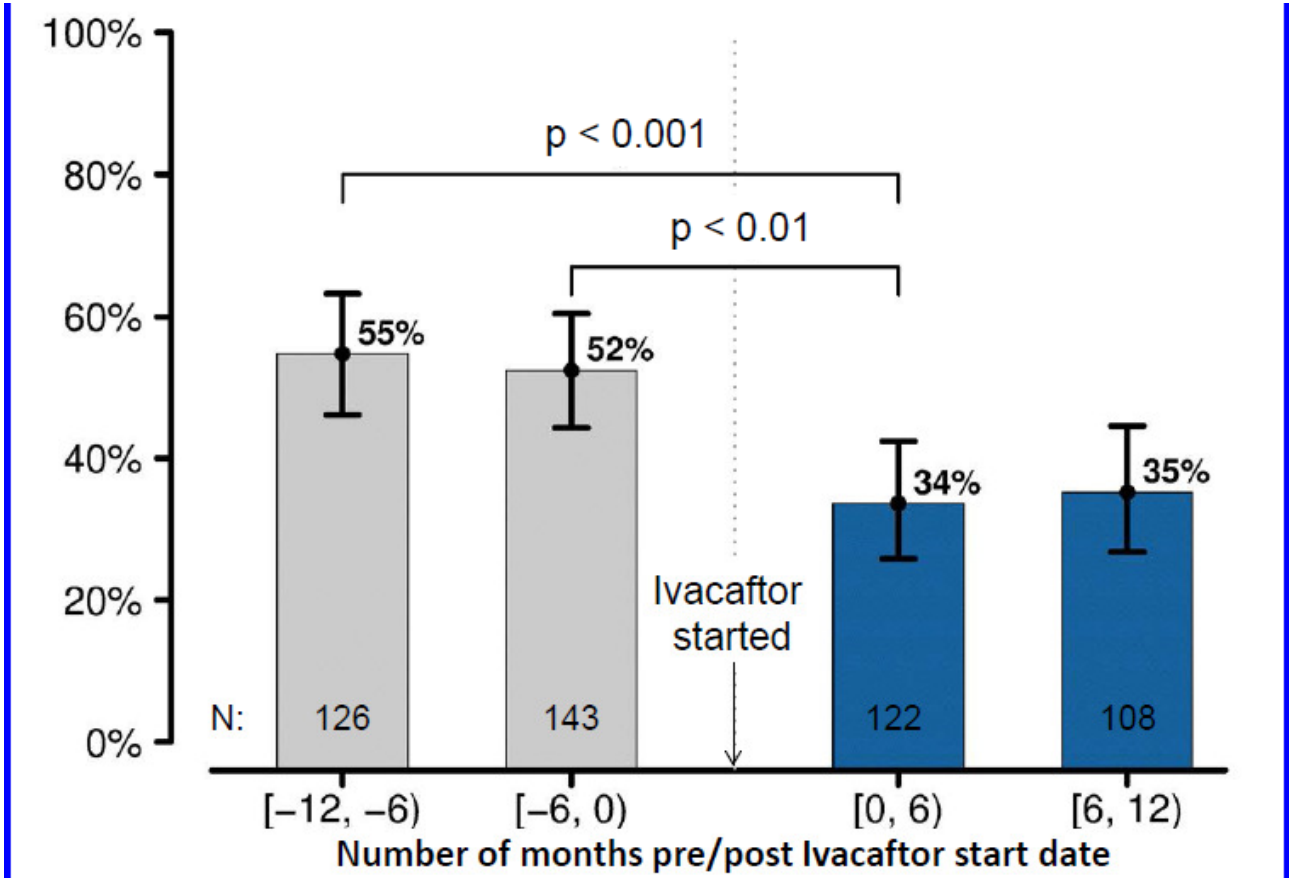
We conducted a randomized, double-blind, placebo-controlled trial to evaluate ivacaftor ...

Estos resultados nos han permitido comprender los beneficios clínicos de mejorar la función del CFTR

Efectos del Ivacaftor en la caída de la función pulmonar

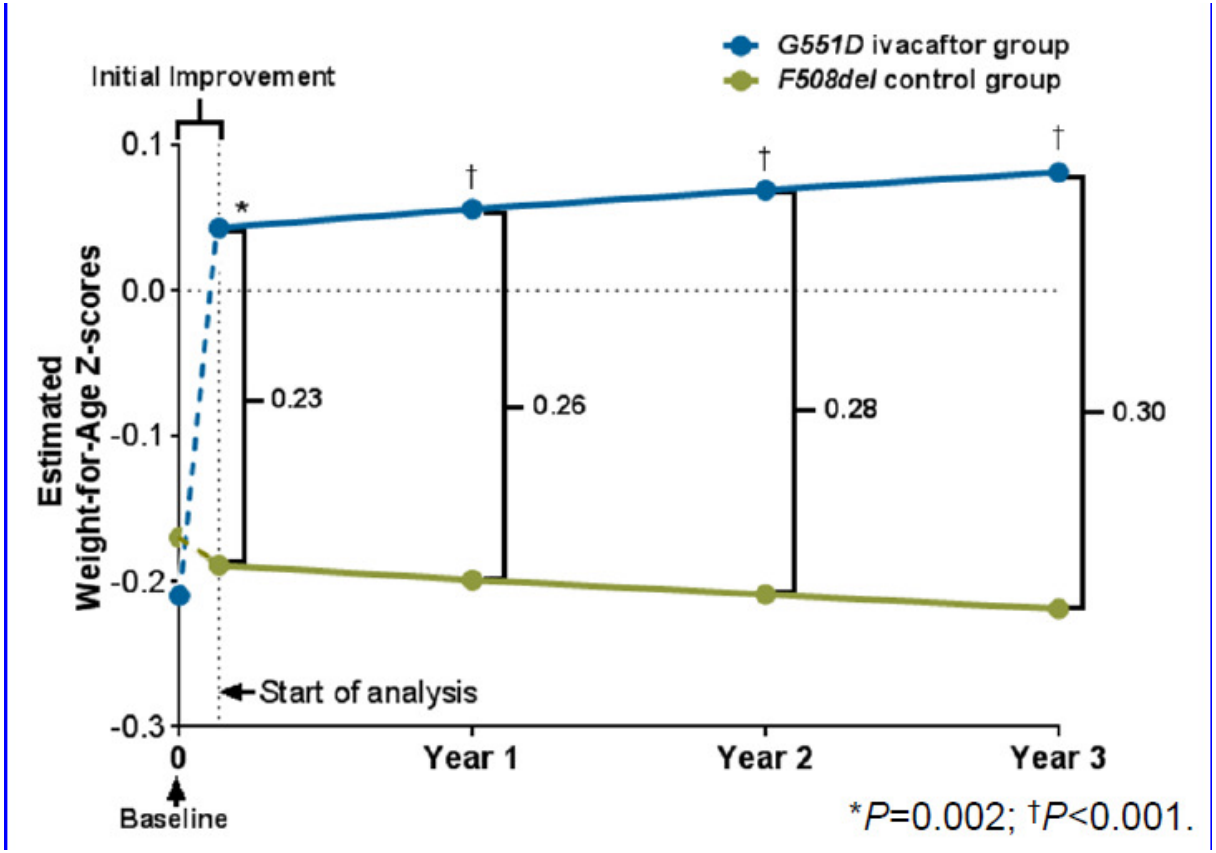


Asociación entre la mejoría de la función del CFTR y la colonización con P. aeruginosa

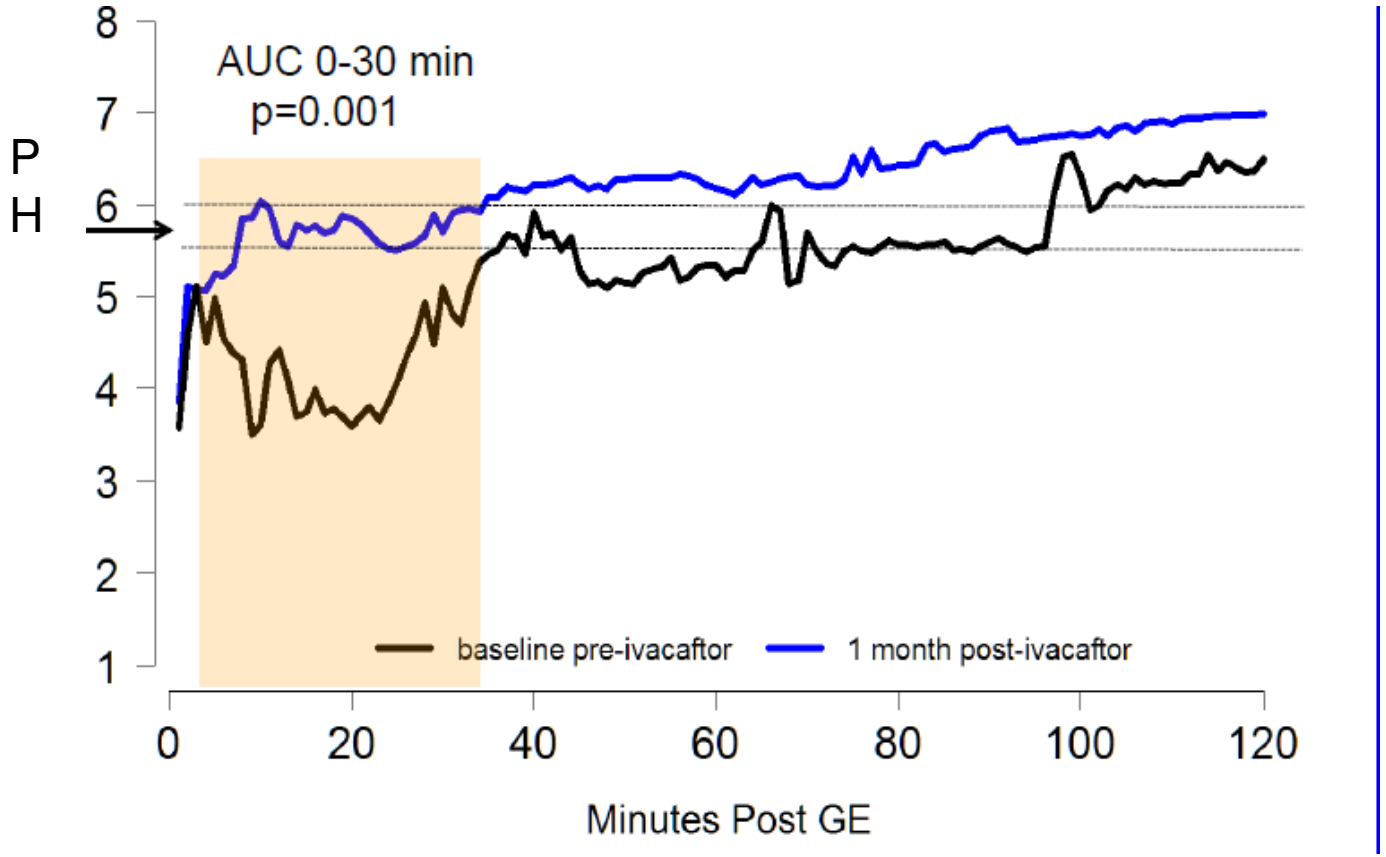


Ramsey et al, AJRCCM, 2014

Ganancia de peso asociada al tratamiento con Ivacaftor

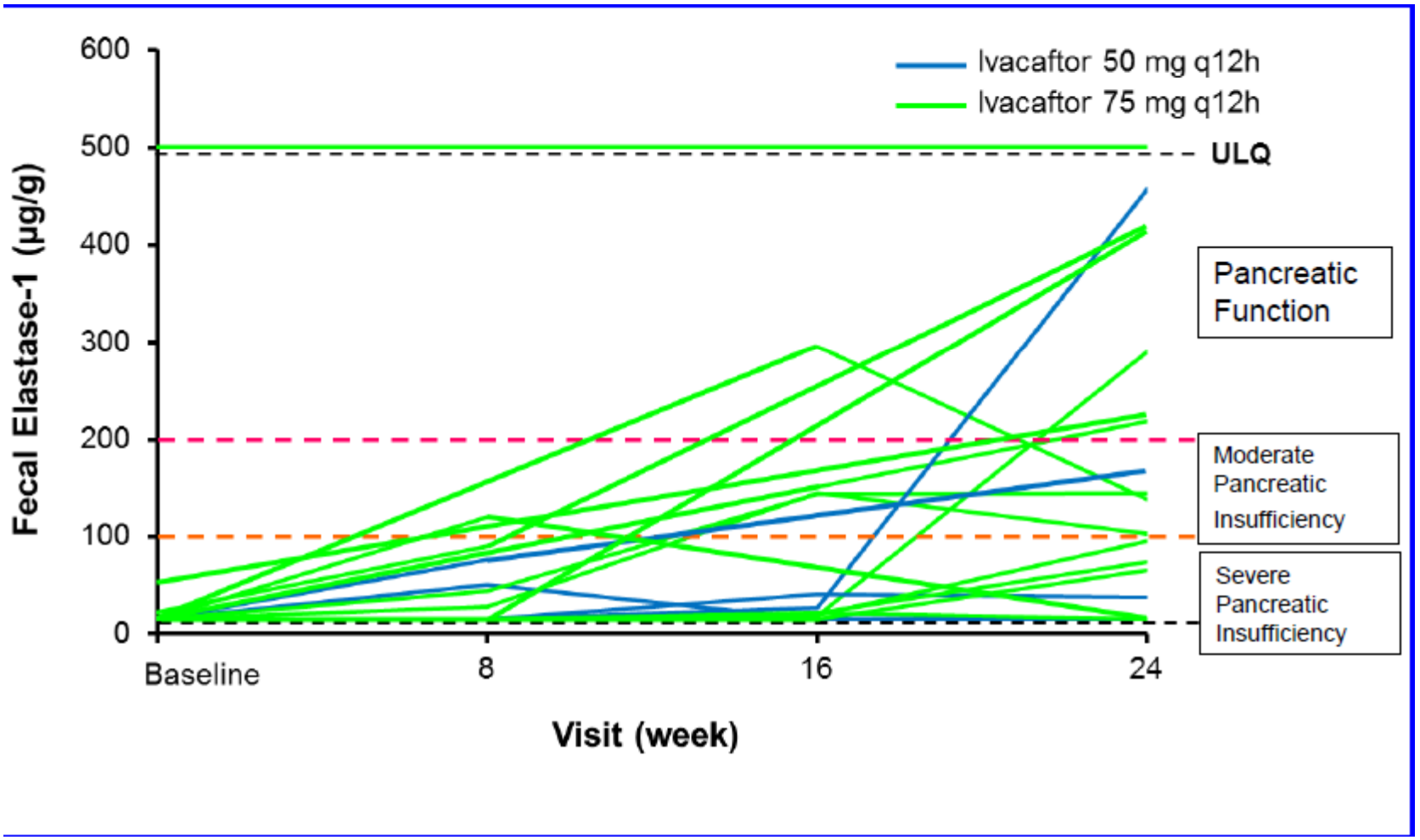


La mejoría en la función del CFTR normaliza el PH intestinal en pacientes con FQ



Borowitz et al, Dig Dis Sci 2013

La mejoría en la función del CFTR mejora la función pancreática



Rosenfeld et al, 2014

A.P.A.Fi.Q

Asociación de Profesionales de la Fibrosis Quistica

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