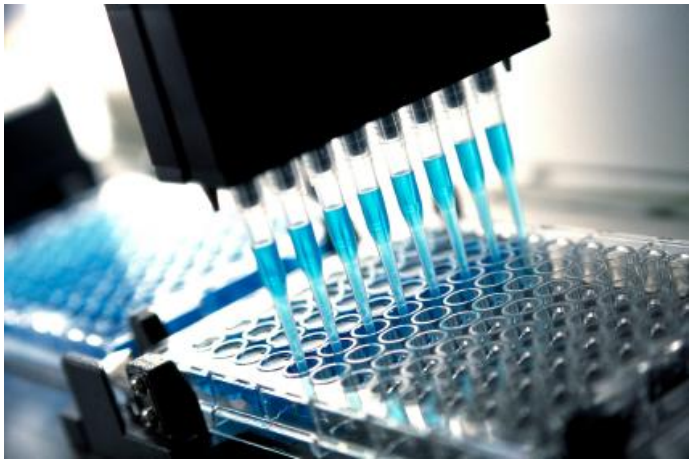
From the Bench to the Bedside: the Challenge of Bringing an Innovative Diagnostic Test to the Market



LIFE LENGTH

Fundación General CSIC

Ciclo jornadas EMPRESA DISEÑO FUTURO

PONS FUNDACIÓN

Con la colaboración de:

POLITÉCNICA

PONS PATENTES Y MARCAS

fundación para el conocimiento madrid

Empresas que diseñan el futuro

The thesis behind the creation of Life Length

- Life span has increased by over 30 years since WWII; in next 30 years, people will routinely live to more than 100 years
- But there is an increasing gap between life span and “health span” – the period in which individuals live with their physical and mental capabilities largely intact
- Chronic “silent” age-related diseases (the big ones cancer, cardiovascular, neurogenerative diseases) are now the biggest problem we face as individuals and societally; ending health and life span

The thesis behind the creation of Life Length

- All these diseases, and many more share in common one thing, they are rarely developed by young people and are “age-related” diseases
- Underlying all these diseases is a fundamental component of human biology –and indeed of all living things – telomeres
- Huge investments are now being made to “cure aging” and the future of serious preventive and personalized medicine has arrived
- Life Length is perfectly positioned at the forefront of a global trend by individuals seeking to live longer, healthier lives as the world leader in this key component of human biology

Key facts

- Life Length - the world's leading healthcare diagnostic company for telomere measurement and testing

TELOMERE ANALYSIS TECHNOLOGY

TELOMAPPING

Corporate clients (B2B)

Academic studies with universities and research centers (B2E)

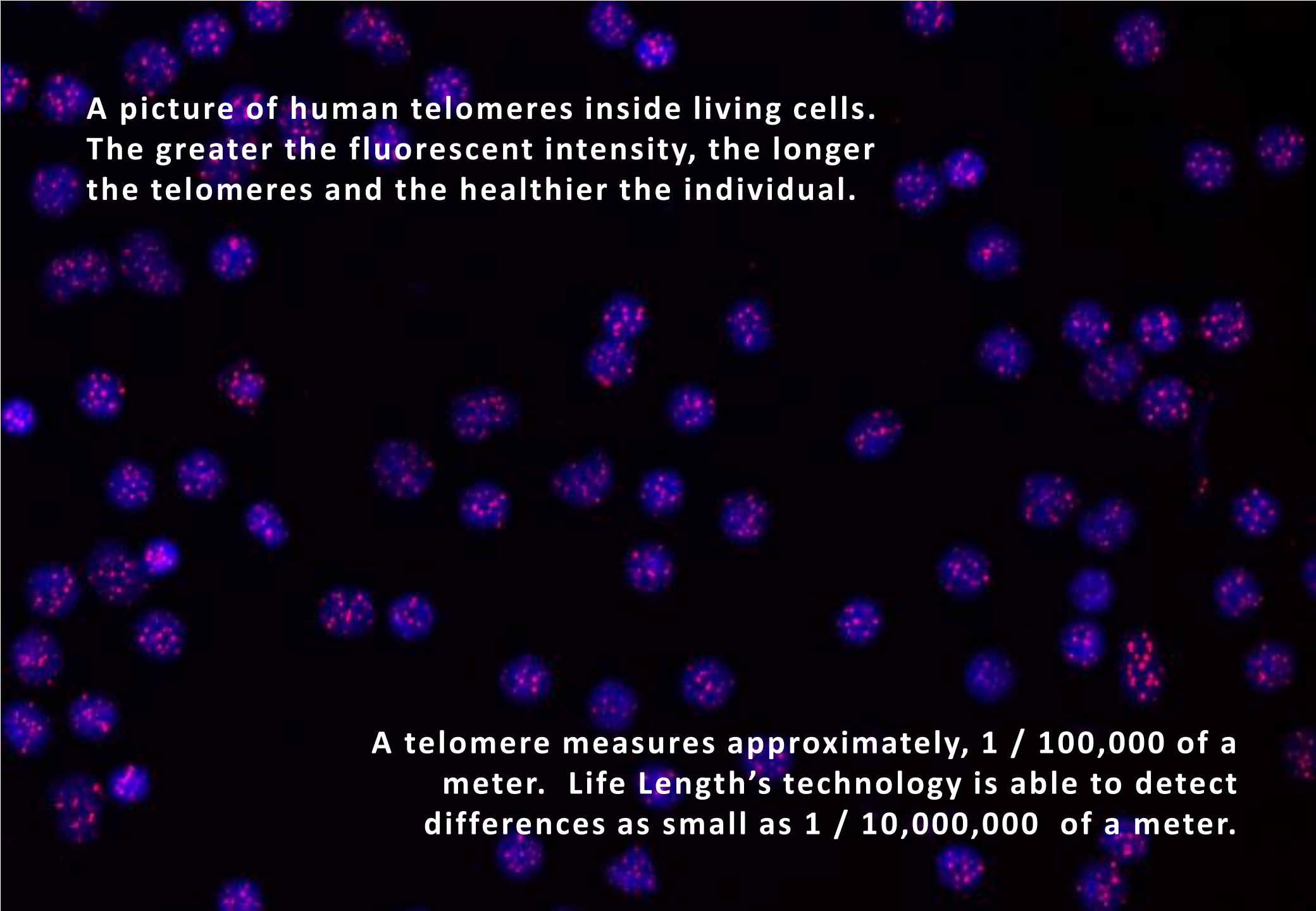
For individuals and doctors in preventive and personalized medicine through distribution partnerships with major diagnostic laboratories worldwide (B2C)

Potential annual market size estimated to be more than $3 billion

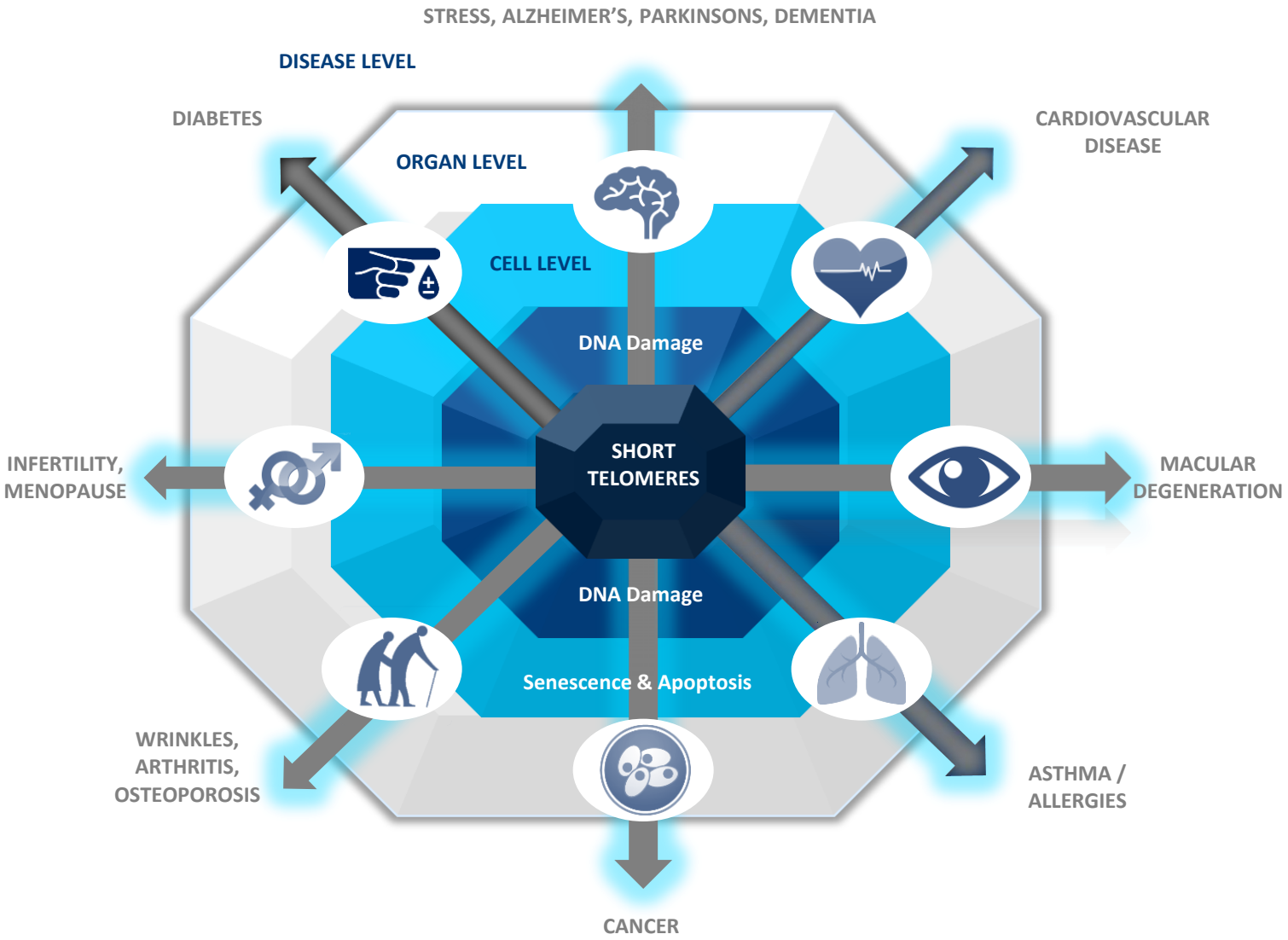
Key facts

- Life Length's business plan is focused on building major barriers to entry to protect its global leadership position in this field
- Most important early stage healthcare / diagnostic company in Spain. The Company was recipient of three awards in 2013:

Best new technology company in Spain – award given by leading Spanish business newspaper *Expansión* – June 2013	Expansión
Best company for technological innovation in the Community of Madrid – award given by the Fundación Madri+d – October 2013	fundación madri+d
Best investment opportunity – award given by Spanish Business Angels competition in which more than 130 companies competed – November 2013	AEBAN ASOCIACION ESPAÑOLA BUSINESS ANGELS


A picture of human telomeres inside living cells.
The greater the fluorescent intensity, the longer
the telomeres and the healthier the individual.
A telomere measures approximately, 1 / 100,000 of a
meter. Life Length's technology is able to detect
differences as small as 1 / 10,000,000 of a meter.

Telomeres play a central role in the development of age-related diseases; nearly 18,000 published scientific and medical articles have demonstrated this



LIFE LENGTH

What is Life Length?

- Life Length - world's leading healthcare diagnostic in **telomere biology**
- **Spin-off** of the prestigious Spanish National Cancer Research Institute (CNIO)
- Telomere length - the most accurate indicator of cellular aging and **best approach to estimating biological age**
- **Approximately €28 million investment** to date since technology development by government to current stage
- Life Length holds the **exclusive worldwide rights** to the commercial exploitation of the technology in exchange for royalties
- Currently 25 employees but more than 1,500 people working with Life Length **in over 20 countries** worldwide

cnio
Centro Nacional de Investigaciones Oncológicas

MATLIN | ASSOCIATES

FUNDACIÓN BOTÍN

山田養蜂場
YAMADA BEE FARM

Who are Life Length's clients?

Technology	The broadest portfolio of accurate, scalable technologies to measure telomeres in the world	
Value	General health/biological indicator & biomarker	Innovative tool to test the efficacy and safety of compounds and products
Business lines	**INDIVIDUALS**	**CORPORATE AND INSTITUTIONS**
Clients	**Clinical Analyses** *(laboratories / hospitals)*	**Product Development** *(R&D departments)* / **Scientific and Academic Research**
	• Individuals • Doctors • Clinics • Hospitals	• Pharmaceutical / Biotech • Nutraceuticals and supplements • Skin care & cosmetics • Food and nutrition • Animal health
		• Oncology • Cardiology • CNS / Neurology • Infertility • Other diseases (Diabetes, CKD, AIDS etc.)

LIFE LENGTH

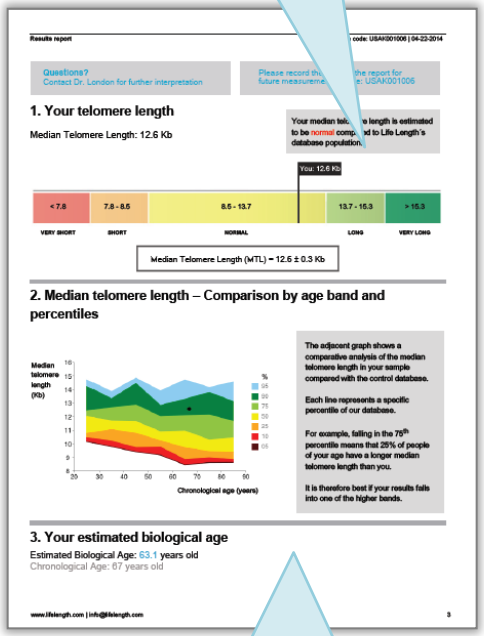
Example of telomere length analysis report - Individuals

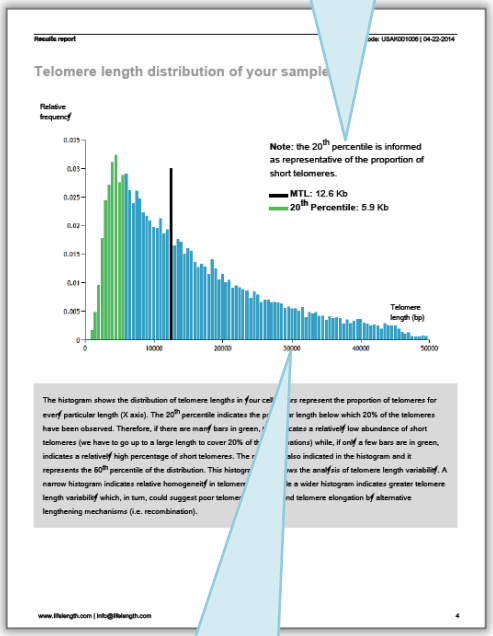
One-page-summary results

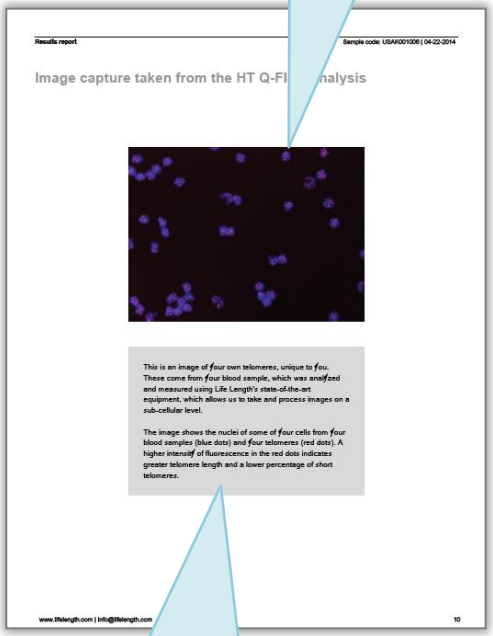
Quantitative information

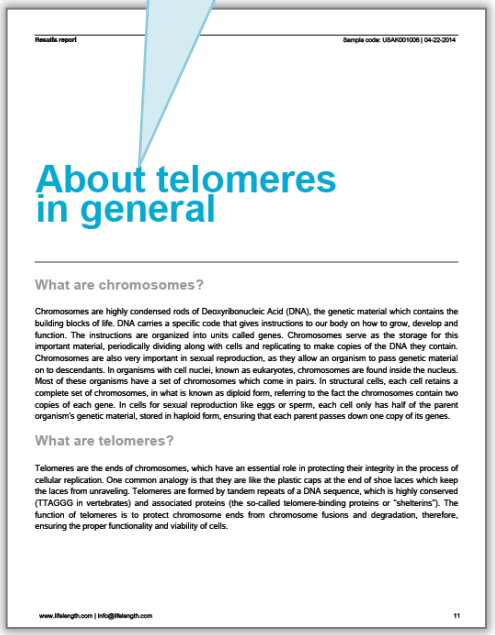
Real image of the telomeres analyzed

FAQs









Clean-attractive format

Visual information

Explanation text boxes for each graph

The report contains highly valuable information for doctors and medical institutions, but is also readily understandable and insightful for the individual who takes the test

Note: Complete report is not shown here

LIFE LENGTH

How our TAT is being used by doctors in clinical medicine

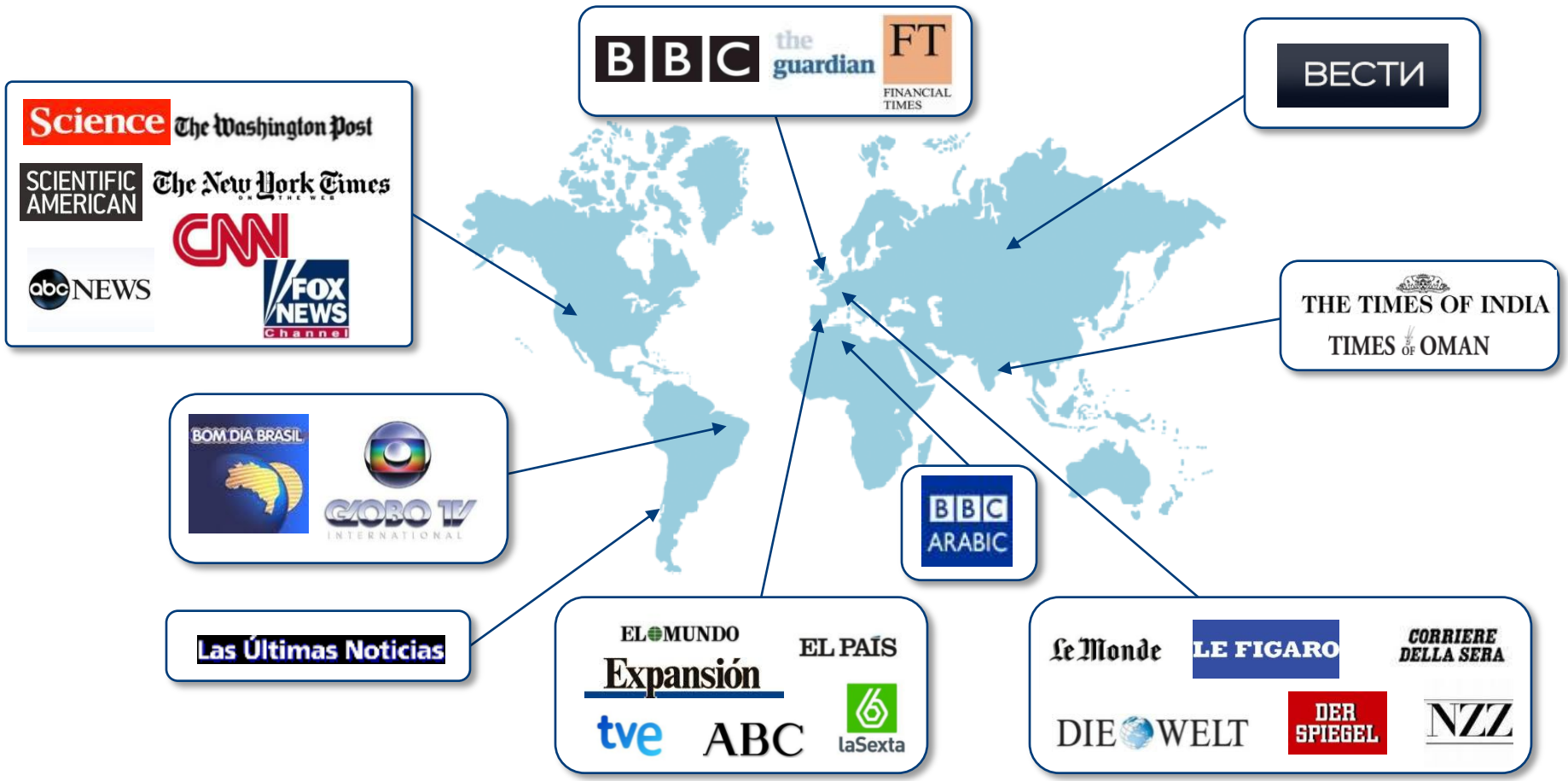
- To assess and help treat the **risk of developing heart disease** which can potentially detect CVD in advance of traditional diagnostic tests
- For **assessing cancer risk – particularly breast, ovarian/uterine, prostate, skin and certain other cancers**
- To diagnosis and help treat potential **infertility problems** in women
- For diagnosing people who may be at greater risk of **developing metabolic diseases including Diabetes Type 2**
- For assessing and to help treat the **risk of developing arthritis and osteoporosis**
- For assessing the **risk of developing CNS (Central Nervous System) diseases including dementia, Parkinson's and Alzheimer's**
- As an **indicator of overall stress and how you cope with stress**

How our TAT is being used by doctors in clinical medicine

- And as a general assessment, especially used on an annual basis, **in proactive and preventive medicine and check-ups** to follow your rate of aging and the risk of developing major age-related diseases

- And to **take appropriate steps in each case to minimize the risks of developing these diseases** and see the beneficial effects of having a healthy life-style which will contribute to help slowing the aging process therefore contribute towards longevity and health span

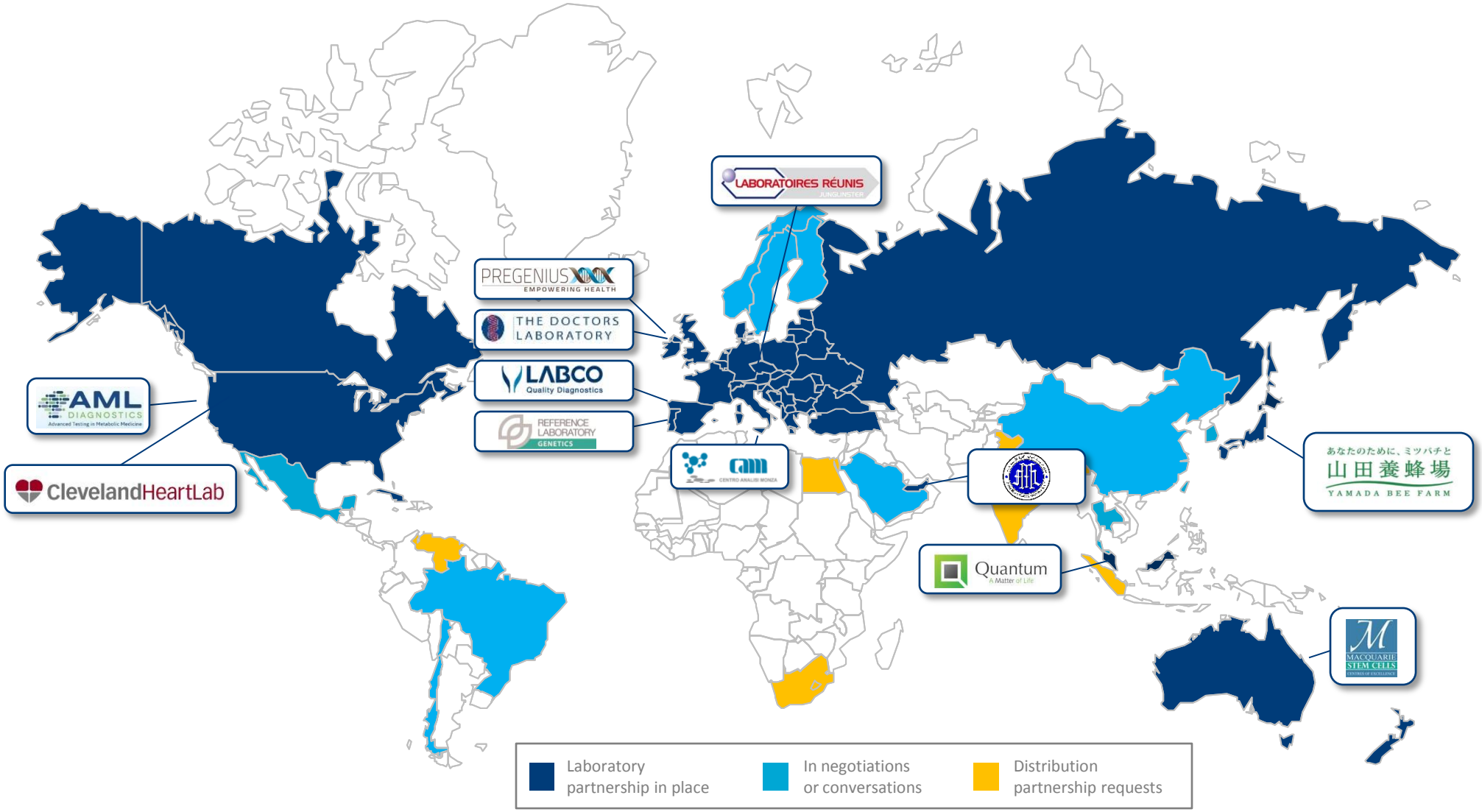
Life Length has achieved an unprecedented level of global recognition in the media



Life Length has been featured prominently in cover articles in many of the world's most prestigious newspapers and magazines

Life Length currently operates in 13 languages; the only diagnostic lab in the world that does so

Life Length already has 13 major lab partners and is selling in more than 20 countries from the U.S. to Russia to Japan and Australia



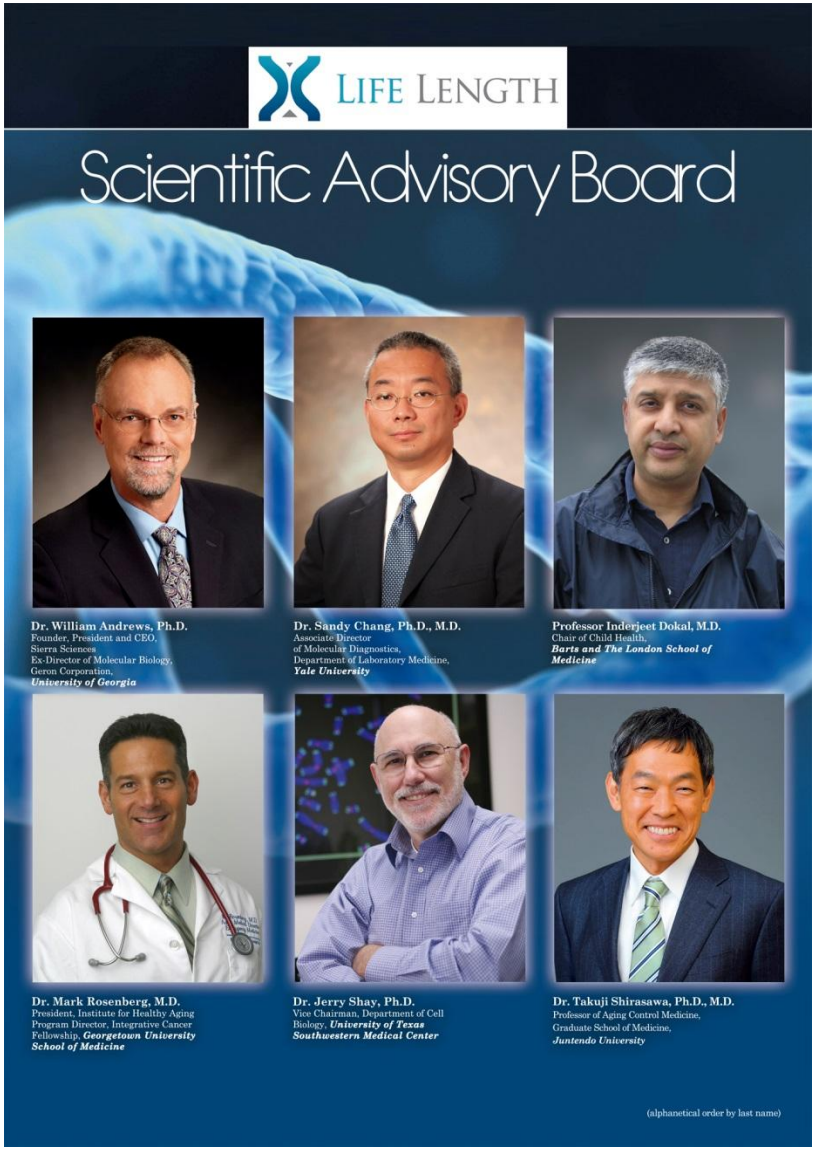
LIFE LENGTH

Life Length is rapidly becoming the gold standard for clinical and academic telomere research

BRAINAGE	brain age Committed to healthy brain ageing from the very beginning	Environmental influences in prenatal life have a major impact on brain aging and age-associated brain disorders
EUROBATS	EuroBATS	Study on 8,000 identical twins to identify predictors of aging
FRAILOMIC	frailomic	Utility of omic-based biomarkers in characterizing older individuals at risk for frailty, its progression to disability and general consequences to health and well-being

We are also conducting numerous studies for corporate clients with nutraceutical products and which want to evaluate their impact on telomeres

Life Length has world-class Scientific Advisory Board demonstrating the quality and importance of its science and technology

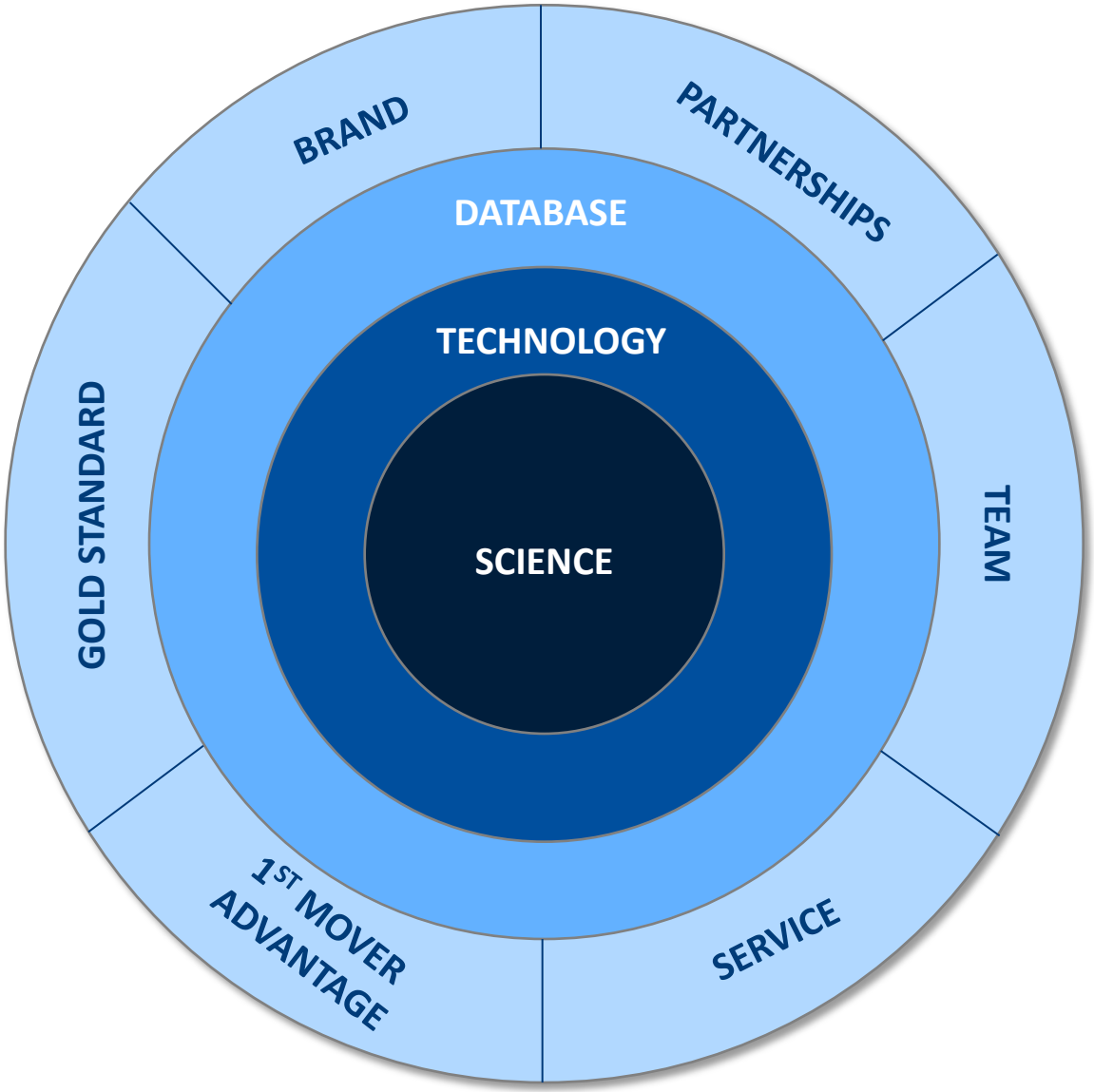


Life Length advisors include scientists from:

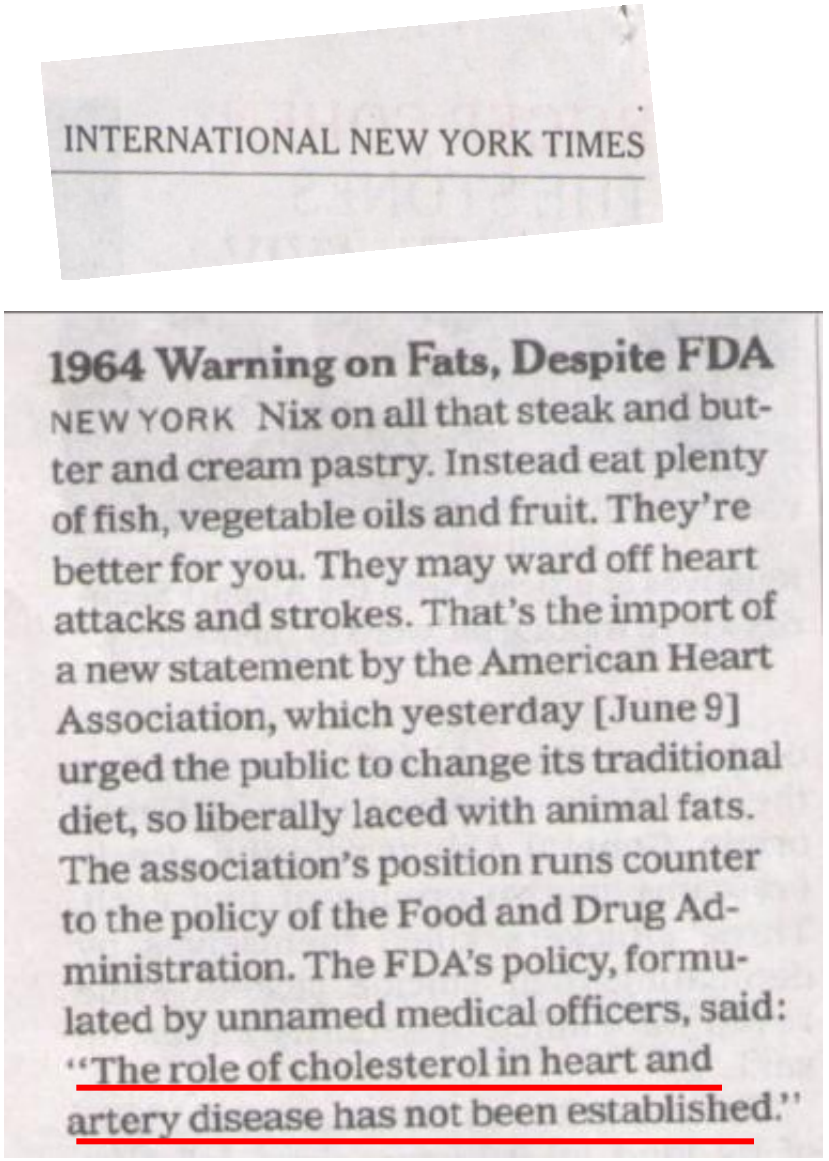
- Southwestern Texas Medical Center
- Yale University
- Barts and The London School of Medicine (UK)
- Juntendo University (Japan)

LIFE LENGTH

Life Length has established very significant barriers to entry



Medicine continues to evolve . . .

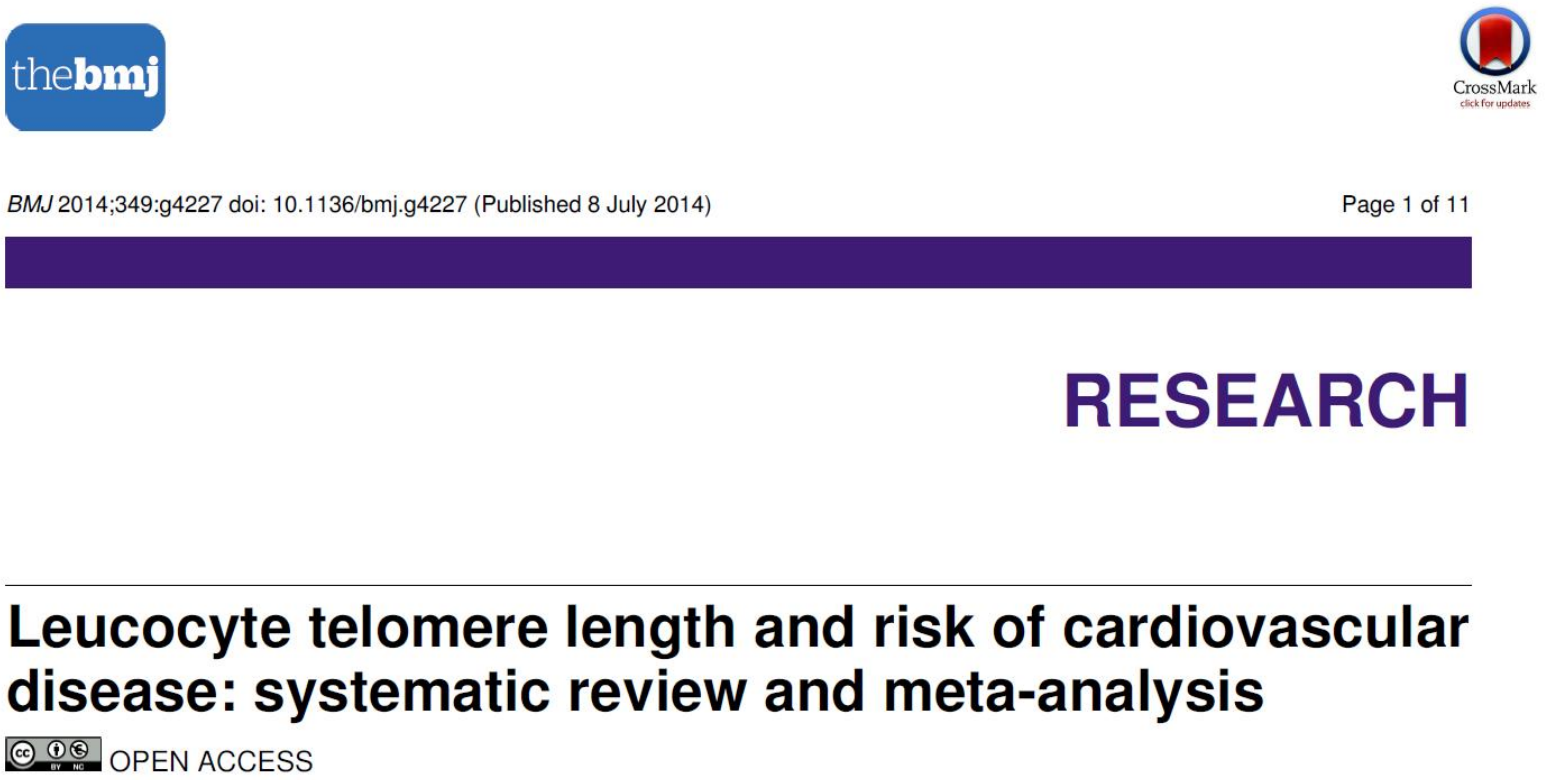


INTERNATIONAL NEW YORK TIMES

1964 Warning on Fats, Despite FDA

NEW YORK Nix on all that steak and butter and cream pastry. Instead eat plenty of fish, vegetable oils and fruit. They're better for you. They may ward off heart attacks and strokes. That's the import of a new statement by the American Heart Association, which yesterday [June 9] urged the public to change its traditional diet, so liberally laced with animal fats. The association's position runs counter to the policy of the Food and Drug Administration. The FDA's policy, formulated by unnamed medical officers, said: "The role of cholesterol in heart and artery disease has not been established."

. . .and there are now more than 600 scientific and medical publications regarding telomere length and cardiovascular disease . . .



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BMJ 2014;349:g4227 doi: 10.1136/bmj.g4227 (Published 8 July 2014)

RESEARCH

Leucocyte telomere length and risk of cardiovascular disease: systematic review and meta-analysis

OPEN ACCESS

And the science is now moving into commercial application . . .

BUSINESS DAY

A Genetic Entrepreneur Sets His Sights on Aging and Death

By ANDREW POLLACK MARCH 4, 2014

J. Craig Venter is the latest wealthy entrepreneur to think he can cheat aging and death. And he hopes to do so by resorting to his first love: sequencing genomes. On Tuesday, Dr. Venter announced that he was starting a new company, Human Longevity, **which will focus on figuring out how people can live longer and healthier lives.**

Slowing aging, if it can be done, could be a way to prevent many diseases, an alternative to treating one disease a time.

"Your age is your No. 1 risk factor for almost every disease, but it's not a disease itself," Dr. Venter said in an interview. Still, his company will also work on treating individual diseases of aging.

Human Longevity said it had raised **$70 million**, most of it from wealthy individuals . . .

With resources never before invested . . .

TECH 9/03/2014 @ 2:46PM 3.671 views

Google's Calico Joins AbbVie In 'Pivotal' Partnership **To Develop Anti-Aging Drugs; to invest up to $1.5 billion**

Google's **GOOGL** +0.13% Calico biotech company is ready to begin battling age-related diseases — and ready to profit from its drugs and therapies, too. Calico ("California Longevity Company"), the independent company led by Genentech chairman Art Levinson in which Google is the main investor, said Wednesday it will join forces with North Chicago-based pharmaceutical company AbbVie to bolster the visions of Calico, **which seeks to improve human health and longevity . . .**

We hope that Life Length's unique technology will form part of this future to help us live longer, healthier lives.

Datos de Contacto.

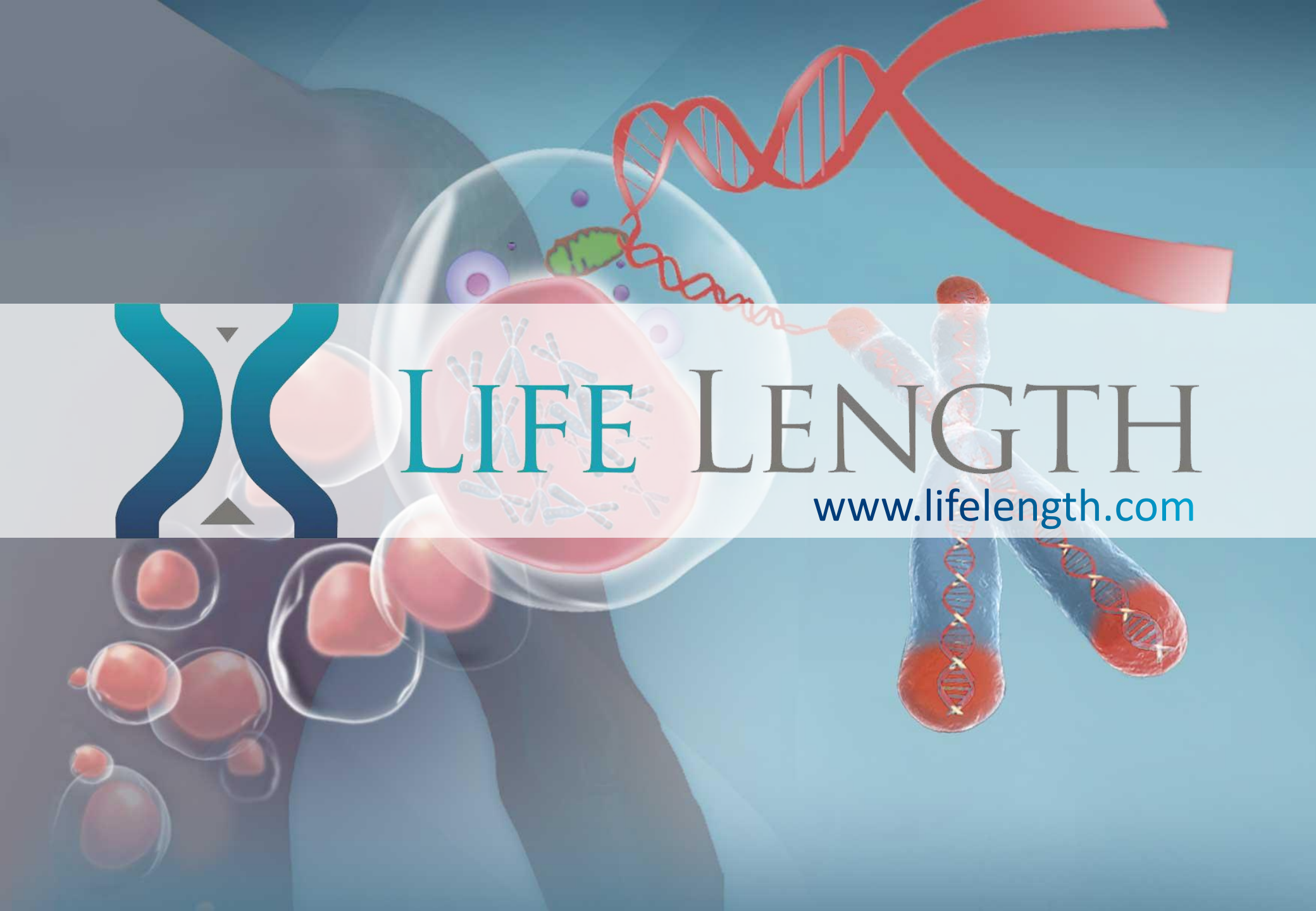
Si estas interesado en colaborar con Life Length o conocer su edad biológica y como envejecer de forma más sana y lenta, por favor, contáctanos:

Por correo: info@lifelength.com

Telefono: 91 737 1298

c/ Miguel Ángel, 11 – 2º
Madrid 28010
www.lifelength.com

Muchas gracias por vuestra atención.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www.lifelength.com