

# Treating Alzheimer's Disease & Obesity

*A compelling opportunity for healthcare equities*

**Linden Thomson**

Linden.Thomson@axa-im.com

**Cinney Zhang**

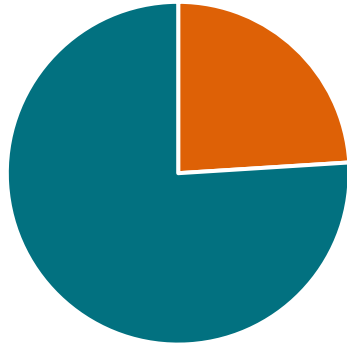
Cinney.Zhang@axa-im.com

AXA IM Equity

October 2023

# Alzheimer's disease is not just a concern for our parents but also one for the next generations

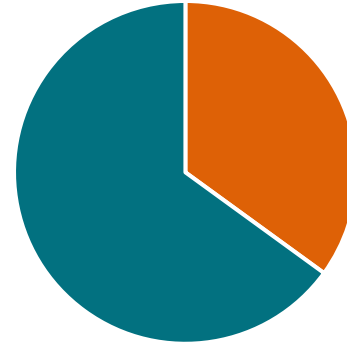
% born in 2015 that will develop dementia in their lifetime



24%

of men

and



35%

of women

## Dementia now affects almost 1 million people in the UK and is a leading cause of death



### Leading cause of death

In England and Wales in 2022 was dementia, accounting for **11.4%** of deaths



**1.6m**

People will be living with dementia by 2050



**£25bn**

Is the cost of dementia in 2021. It is expected to **almost double** by 2050 to **reach £47bn**

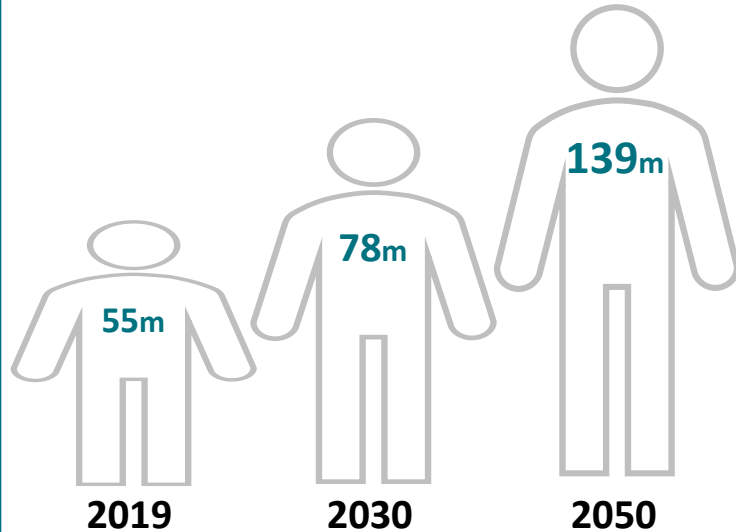


**944,000**

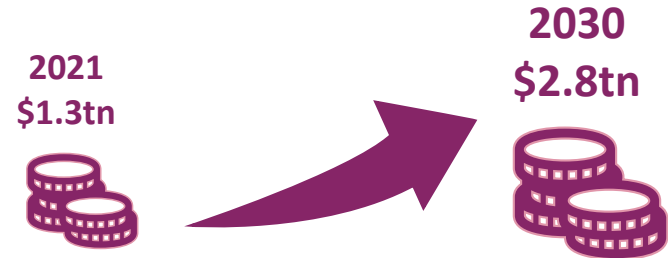
estimated number of people to be living with dementia in the UK.

## 10 million new cases of dementia a year worldwide

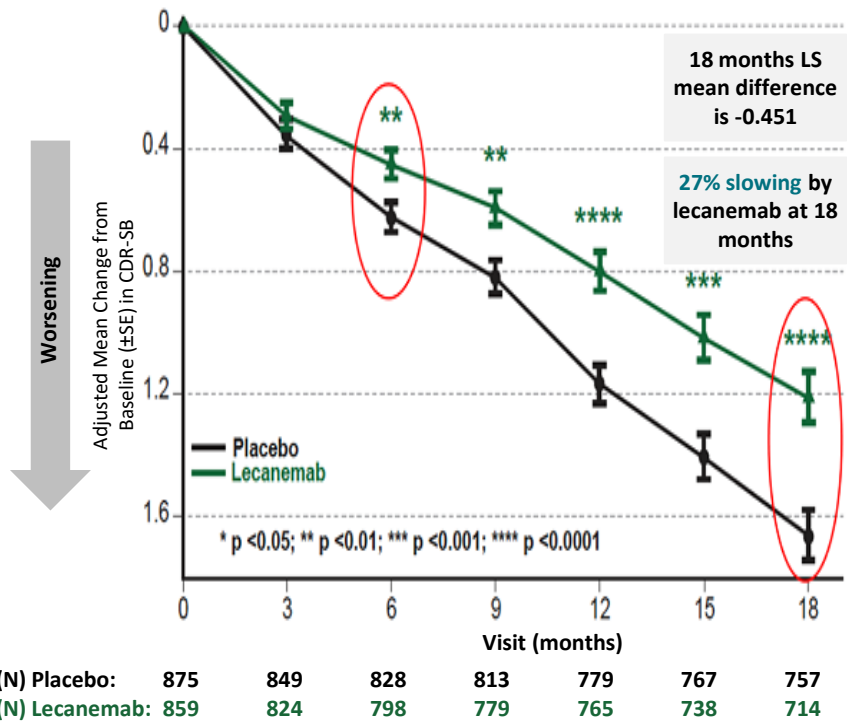
Estimated **growth** in number of **people with dementia** 2019-2050



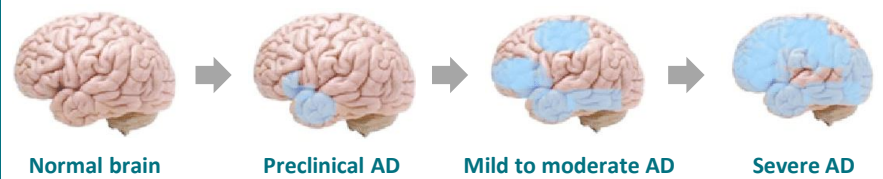
The total estimated **annual** worldwide **cost of dementia** is over **US\$ 1.3 trillion** and is forecast to rise to **US\$ 2.8 trillion by 2030**.



# In 2022, we welcomed a long-awaited breakthrough in Alzheimer's disease drug development from Eisai & Biogen



## Slowing Alzheimer's disease rate of cognitive decline



- By taking the drug, you have about **1/3 lower risk of advancing to the next stage of AD** in an 18-month period.
- Based on statistical modelling, this suggests that **2 years of treatment could delay the progression of AD by up to 3 years.**

Source: AXA IM, Eisai CTAD Presentation, 29 November 2022, Researchgate, progression of neuropathology and cognitive impairment in AD. AD stands for Alzheimer's disease.

# Leqembi is making inroads worldwide, opening door to Alzheimer's market for Eli Lilly & others

New Alzheimer's drugs



## Eisai's Alzheimer's drug Leqembi approved in Japan

Japan is the second country to OK Eisai and Biogen's anti-amyloid drug, which received a full U.S. clearance in July.

Published Sept. 25, 2023



[Ned Pagliarulo](#)  
Lead Editor



PHARMA

## Regulatory tracker: Lilly hops on bandwagon in Japan, requests approval for Alzheimer's drug

By [Angus Liu](#), [Kevin Dunleavy](#), [Eric Sagonowsky](#) · Sep 26, 2023 02:41pm

Future of Health



## Lilly drug slows Alzheimer's by 35%, bolstering treatment approach

By [Julie Steenhuisen](#) and [Deena Beasley](#)

May 8, 2023 7:39 AM GMT+1 · Updated 5 months ago



HEALTH CARE

## Eli Lilly expects FDA approval of its Alzheimer's drug this year

BY [NATHANIEL WEIXEL](#) · 07/17/23 1:08 PM ET



## Alzheimer's Disease market opportunity is significant, despite some logistical challenges currently

Comment July 10, 2023

### Broader coverage for Eisai/Biogen's Leqembi follows traditional FDA approval

GlobalData Healthcare

The full approval for Leqembi is a pivotal moment for the Alzheimer's disease market.

07 Jun, 2023

Global Alzheimer's disease market to reach \$13.7bn in 2030 driven by novel drug launches, forecasts GlobalData

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Ivan Cheung, Eisai US chair and CEO

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March 10, 2023 01:55 PM EST | Pharma

### Eisai projects \$7B in sales by 2030 for new Alzheimer's drug

in

MORNINGSTAR

### Eli Lilly: Detailed Phase 3 Alzheimer's Data With Donanemab Reinforces Drug's Strong Outlook

Alzheimer's disease drugs could create a large potential market, and we think both Biogen and Lilly will focus on establishing the market rather than fiercely competing against one another, particularly given the likely diagnosis hurdles and treatment bottlenecks in this nascent market. We project peak annual donanemab sales of over \$7 billion.

# Alzheimer's disease & neurodegeneration is an important therapeutic area for biotech R&D

As of January 2023, there were

**141** Unique Therapies in **187** Clinical Trials

for Alzheimer's disease as registered on clinicaltrials.gov

## Agents in clinical trials targets



**11%** cognitive enhancement

**11%** behavioral and neuropsychiatric symptoms

**79%** disease modification

**111** disease-modifying agents in the pipeline

**44%** biologic therapies, mainly monoclonal antibodies (mainly given by IV infusion)

**56%** small molecule therapies (mainly taken orally)



The total number of participants required for currently recruiting trials is

**57,465**

## Global trial distribution

Trials conducted in North America only = **44%**

Trials conducted outside of North America = **22%**

Trials conducted in both North American and outside = **25%**



# AXA IM Biotechnology & Health Funds are investing across the neuroscience space



Pioneer in neuroscience

Multiple Sclerosis

Alzheimer's Disease

Spinal Muscular Atrophy

Biogen Digital Health



Owned in AXA IM Biotech & Health Funds



Dedicated to neurodegenerative diseases

OUR FOCUS

Defeat Degeneration



Lysosomal Storage Diseases



Rare Neurodegenerative Diseases (ALS, FTD)



Parkinson's Disease



Alzheimer's Disease

OUR SCIENTIFIC PRINCIPLES

Increase Likelihood of Success



Degenogene Pathways



Brain Delivery



Biomarker-Driven Development

Owned in AXA IM Biotech Fund



Expertise in protein dysregulation

Addressing devastating proteinopathies affecting millions of patients



Alzheimer's disease (AD)

55 million

People worldwide living with Alzheimer's disease or other dementias<sup>1</sup>



Parkinson's disease (PD)

10 million

People living with PD worldwide<sup>2</sup>



Amyloid light chain amyloidosis (AL)

60,000-120,000

Estimated number of patients with Mayo Stage IV AL amyloidosis globally<sup>3</sup>



Transthyretin amyloidosis (ATTR)

450,000

Estimated number of patients worldwide with wtATTR or ATTRv<sup>4</sup>

Owned in AXA IM Biotech Fund

Source: Biogen, Prothena. Companies shown are for illustrative purposes only as of 02/10/2023. AXA IM Biotechnology fund is the AXA Framlington Biotech Fund, AXA IM Health fund is the AXA Framlington Health Fund. It does not constitute investment research or financial analysis relating to transactions in financial instruments, nor does it constitute an offer to buy or sell any investments, products or services, and should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalized recommendation to buy or sell securities.

# The obesity narrative is changing

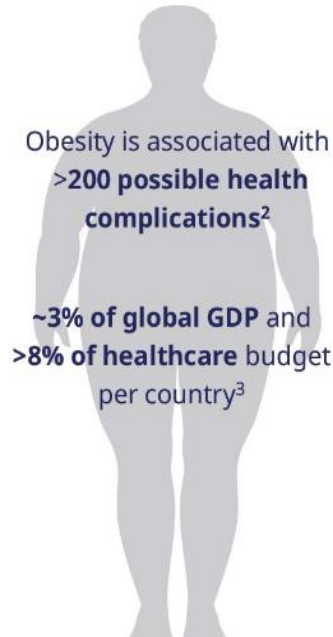
## Obesity is a global epidemic affecting more than 764m people



### Obesity prevalence (%)



## Obesity impacts both the individual and society at large



## The obesity narrative is changing



**Media:** Shift to more empathetic tone



**Healthcare professionals:** Increased recognition among societies within healthcare



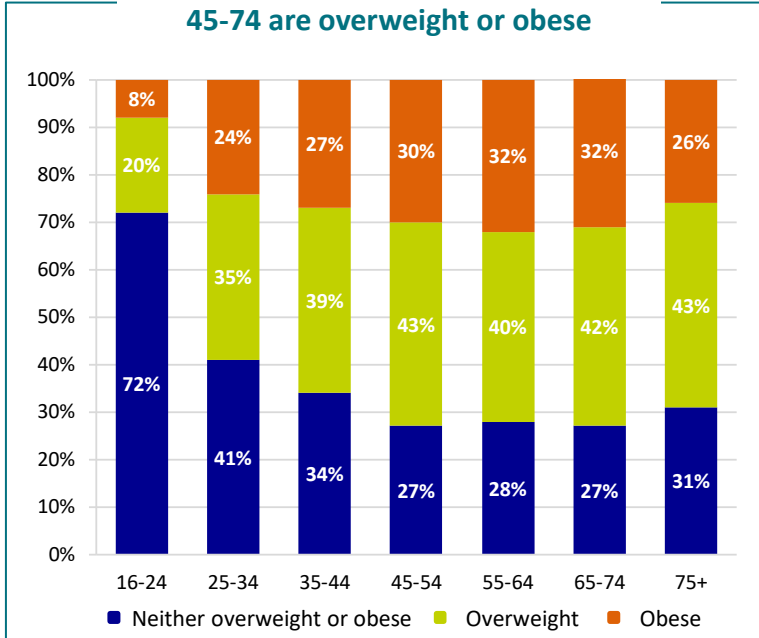
**Policymakers:** More government recognition



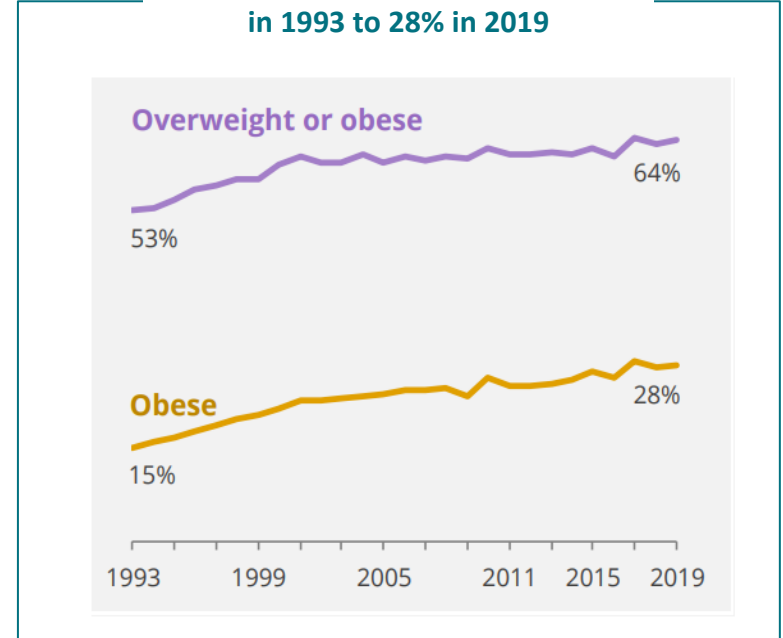
**People with obesity:** Patient groups are encouraging PwO to seek treatment

# The rates of obesity in England are mirrored in many other geographies

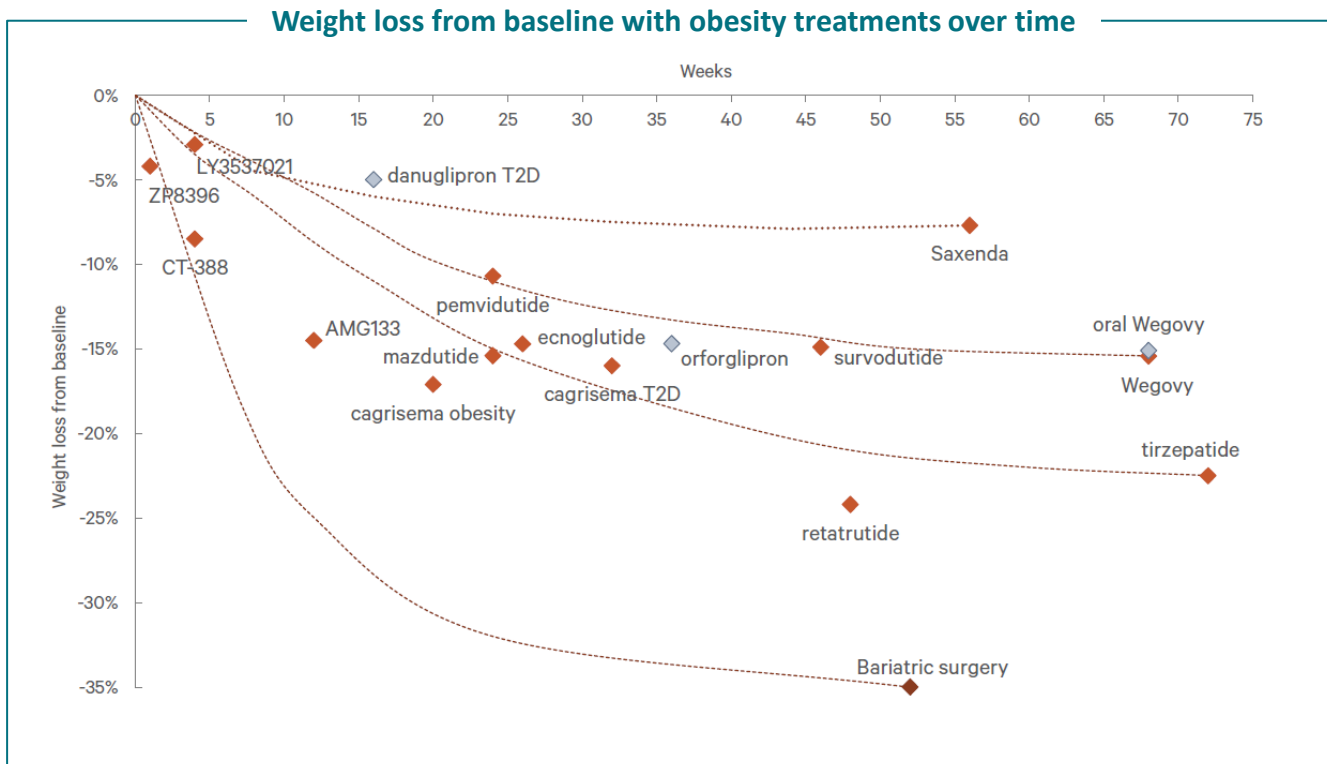
## Around three quarters of those aged 45-74 are overweight or obese



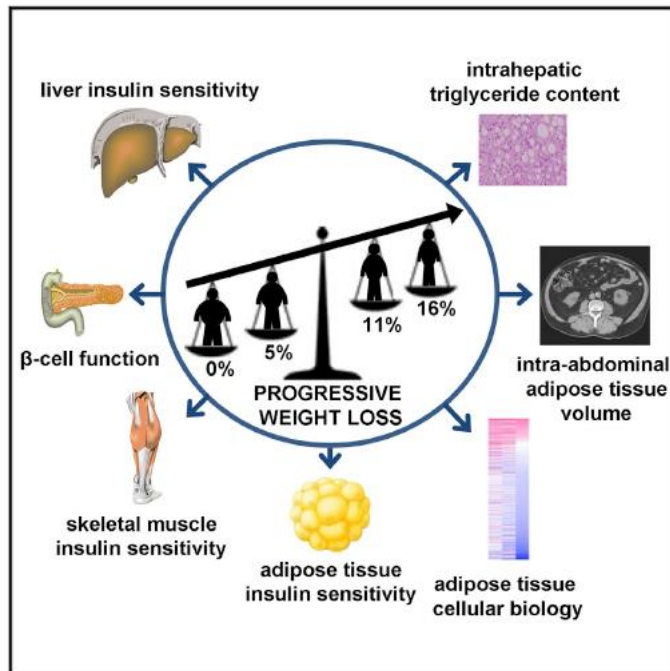
## Obesity levels increased from 15% in 1993 to 28% in 2019



# Impressive weight loss effects from the new generation of obesity drugs



## And a potentially profound impact on the prevalence of other medical conditions



Source: Cell Metabolism : April 2016. Companies shown are for illustrative purposes only as of 29/09/2023. It does not constitute investment research or financial analysis relating to transactions in financial instruments, nor does it constitute an offer to buy or sell any investments, products or services, and should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalized recommendation to buy or sell securities.

# Obesity could become the biggest themes in the sector (and globally)

Morgan Stanley

RESEARCH

GLOBAL INSIGHT

July 14, 2022 09:02 PM GMT

Pharmaceuticals

## Unlocking the Obesity Challenge: a >\$50bn Market

Accessible version  
BofA GLOBAL RESEARCH

US Biopharmaceuticals

The bar of \$100B in annual tirzepatide sales looks SURMOUNT-able for Lilly

Price Objective Change

Tirzepatide could be the first \$100B product in Biopharma

BofA SECURITIES

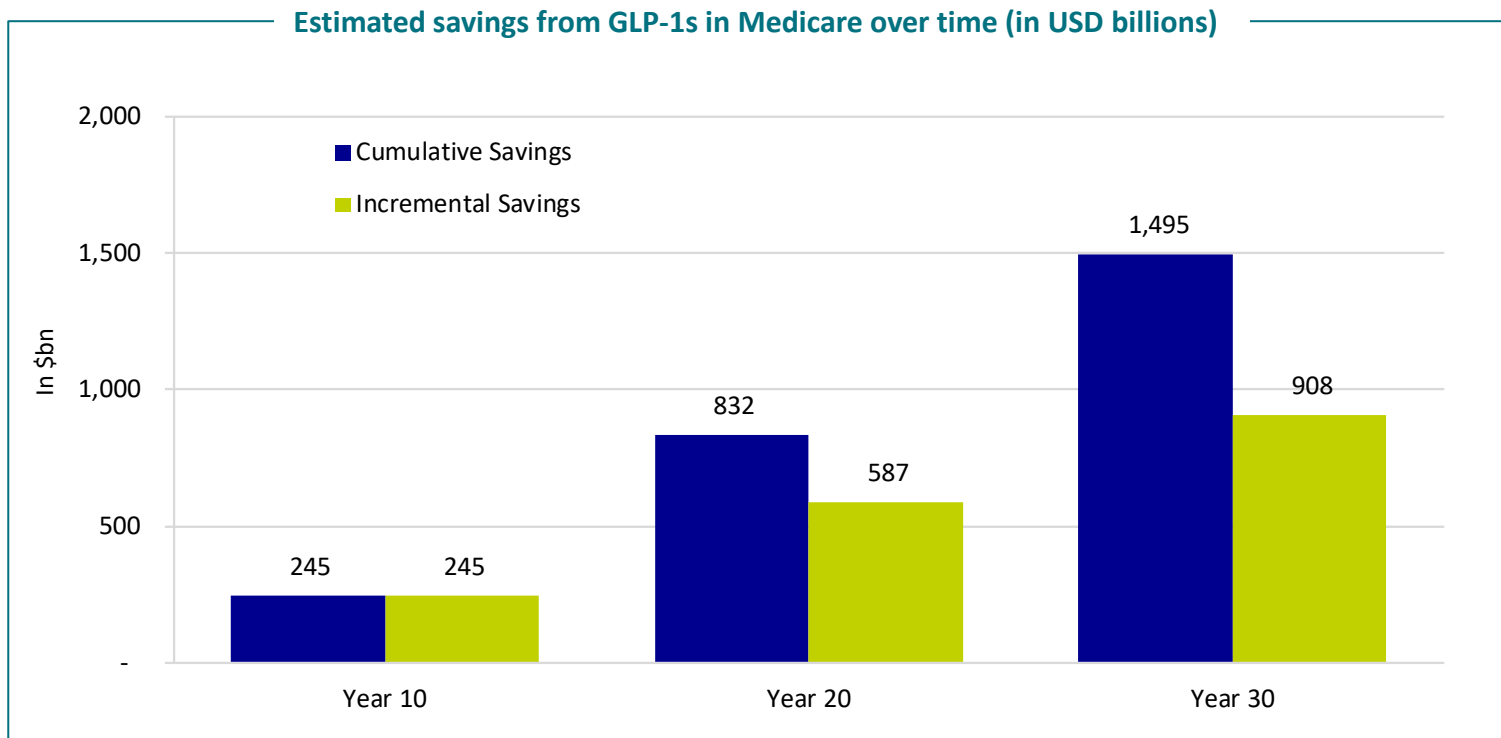
## Jefferies

Novo Nordisk (NOVOB DC)  
Equity Research  
February 22, 2023

### Global GLP-1 market could surpass \$150bn

We forecast the WW GLP-1 market across type 2 diabetes (T2Ds) and obesity to exceed \$150bn by 2031E, largely driven by substantial expansion of the obesity commercial potential to \$100bn. Global sales of GLP-1 drugs appear likely to surpass the PD-X immuno-oncology cancer class in 2025E, perhaps doubling this segment by 2028E.

## With cost savings to the system forecast



## Novo Nordisk's Wegovy makes UK weight-loss debut on 14 September 2023



### Summary Companies

- Novo says Wegovy launch in UK 'controlled and limited'
- To be available via specialist NHS scheme and privately
- Price for private patients from 195 pounds -pharmacies

Source: Reuters, 14 September 2023. Companies shown are for illustrative purposes only as of 29/09/2023. It does not constitute investment research or financial analysis relating to transactions in financial instruments, nor does it constitute an offer to buy or sell any investments, products or services, and should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalized recommendation to buy or sell securities.



# AXA IM Biotechnology & Health Funds are investing across the metabolic space



## Obesity & diabetes therapeutics leader

Engineering, formulating, developing and delivering protein-based treatments

Efficient large-scale production of proteins

Global commercial reach and leader in chronic disease care



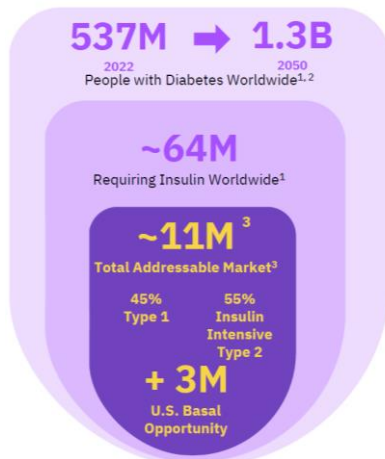
### Strategic aspiration 2025

- More than 25 billion DKK in obesity sales
- Strengthen diabetes leadership, reaching global market share of more than 1/3

## Owned in AXA IM Biotech & Health Funds

# Insulet

## Medtech diabetes pump innovator



## Owned in AXA IM Health Fund



## Biotech peptide specialist in obesity



>\$50bn

Market opportunity  
Obesity treatment

>\$10bn

Market opportunity  
Chronic inflammatory diseases treatment

>\$1bn

Market opportunity  
Type 1 Diabetes management

>\$1bn

Market opportunity  
CHI & SBS

## Owned AXA IM Biotech & Health Funds

Source: Novo, Insulet, Zealand Pharma. AXA IM Biotechnology fund is the AXA Framlington Biotech Fund, AXA IM Health fund is the AXA Framlington Health Fund. Companies shown are for illustrative purposes only as of 29/09/2023. It does not constitute investment research or financial analysis relating to transactions in financial instruments, nor does it constitute an offer to buy or sell any investments, products or services, and should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalized recommendation to buy or sell securities.

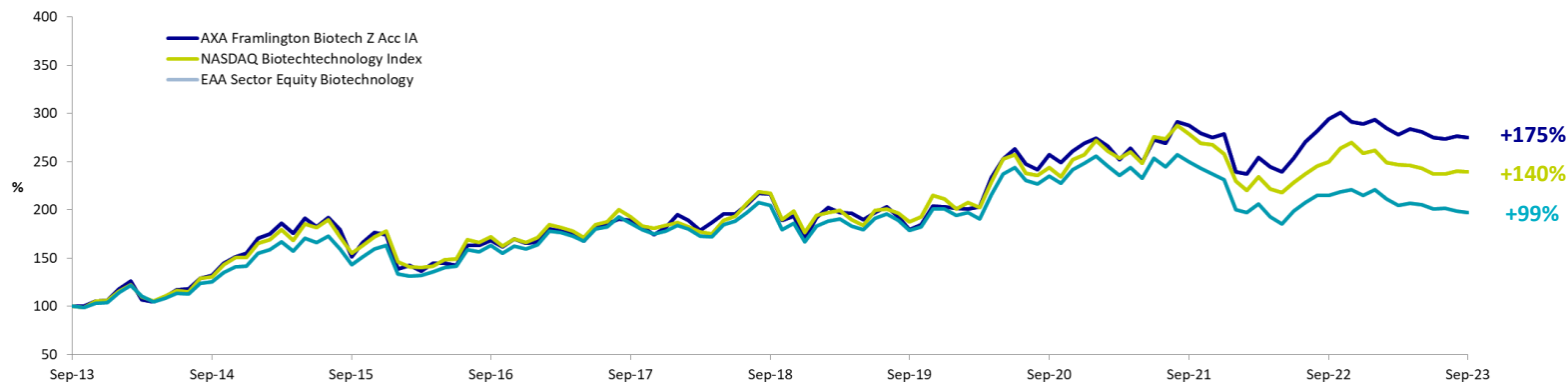
# AXA IM Biotech Fund

## Net performance

Past performance is not a guide to future performance

|   | YTD  | Cumulative |       |      |       |       | Annualised |      |      |     |
|---|------|------------|-------|------|-------|-------|------------|------|------|-----|
|   |      | 1Y         | 3Y    | 5Y   | 10Y   | SI    | 3Y         | 5Y   | 10Y  | SI  |
| AXA Framlington Biotech Z Class - Gross GBP | -4.3 | -5.8       | 9.6   | 32.3 | 198.6 | 638.6 | 3.1        | 5.8  | 11.6 | 9.6 |
| AXA Framlington Biotech Z Class - Net GBP   | -4.8 | -6.6       | 6.9   | 27.0 | 174.9 | 468.6 | 2.3        | 4.9  | 10.6 | 8.3 |
| NASDAQ Biotechnology Index                  | -7.5 | -4.0       | -1.6  | 10.1 | 139.6 | 378.8 | -0.5       | 1.9  | 9.1  | 7.4 |
| Peer group*                                 | -7.8 | -7.6       | -15.3 | -3.0 | 98.8  | 280.7 | -5.4       | -0.6 | 7.1  | 6.3 |
| Quartile                                    | 1    | 3          | 1     | 1    | 1     | 1     | 1          | 1    | 1    | 1   |

### 10-year net historical performance



Source: AXA IM, Morningstar as at 30/09/2023. Basis: Share Class Z Acc share class since 16/04/2012 compounded with R share class performance history. Since inception (SI) is from the launch of AXA Framlington Biotech Z Acc on 26/11/2001. Basis: single price (NAV) from 15/09/2014 and bid prices prior to this (to ensure consistent figures between bid and NAV prices, an adjustment factor has been applied), Net Income Total Return, Net/fees, Single Price Basis (NAV), GBP. Benchmark : NASDAQ Biotechnology Index (NBI). \*Peer group is the EAA Sector Equity Biotechnology. Within this peer group funds are grouped into categories according to their actual investment style, not merely their stated investment objectives, nor their ability to generate a certain level of income. To ensure homogeneous groupings, Morningstar normally allocates funds to categories on the basis of their portfolio holdings. Several portfolios are taken into account to ensure that the fund's real investment stance is taken into account. **Return may increase or decrease as a result of currency fluctuations.** CR09911/07-19

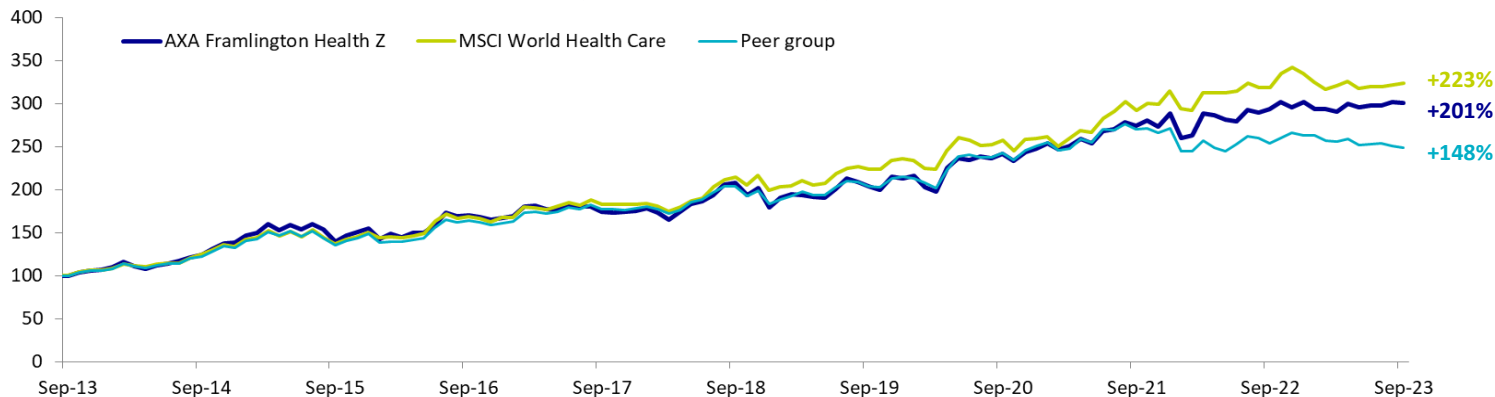
# AXA IM Health Fund

## Net performance

Past performance is not a guide to future performance

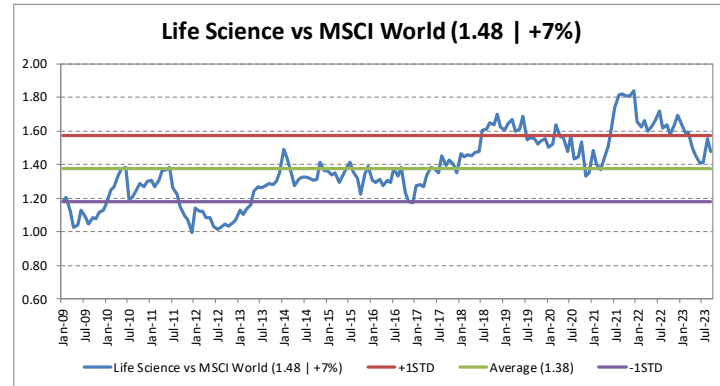
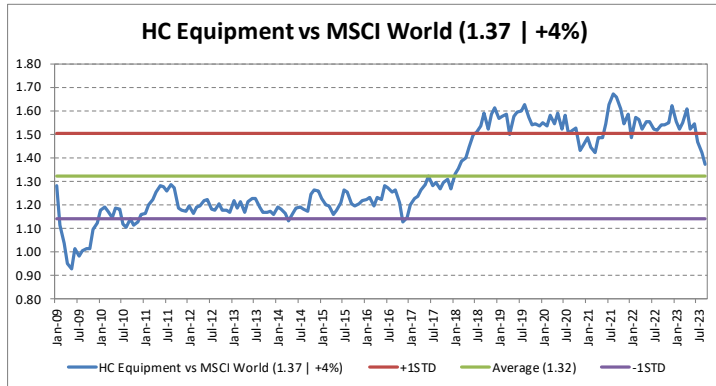
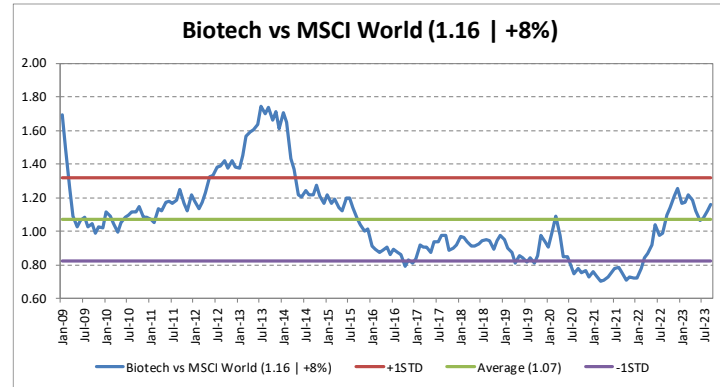
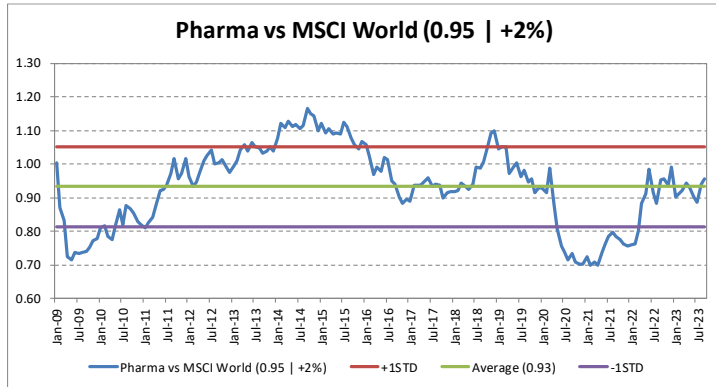
|  | Cumulative |      |      |      |       | Annualised |     |      |
|--|------------|------|------|------|-------|------------|-----|------|
|  | YTD        | 1Y   | 3Y   | 5Y   | 10Y   | 3Y         | 5Y  | 10Y  |
| AXA Framlington Health Z Class - Gross GBP | 0.3        | 3.3  | 27.6 | 50.7 | 229.5 | 8.5        | 8.5 | 12.7 |
| AXA Framlington Health Z Class - Net GBP   | -0.3       | 2.4  | 24.5 | 44.7 | 200.5 | 7.6        | 7.7 | 11.6 |
| MSCI World Health care                     | -3.4       | 1.4  | 25.7 | 50.3 | 223.5 | 7.9        | 8.5 | 12.4 |
| Peer group*                                | -5.6       | -2.2 | 2.4  | 21.5 | 148.4 | 0.8        | 4.0 | 9.5  |
| Quartile                                   | 1          | 1    | 1    | 1    | 2     | 1          | 1   | 2    |

### 10-year net historical performance



Source: AXA IM, Lipper and Morningstar as at 30/09/2023. Peer group is the EAA Sector Equity Healthcare. Basis: Z Inc share class since 19/01/2015 compounded with R share class performance history. NAV, net income reinvested, net of fees in GBP. MSCI World Health Care NR is a composite benchmark of TR data to 31/12/2012 and NET TR data thereafter. Fund category is IA Specialist. Past performance is not a guide to future performance. Performance calculations are based on the reinvestment of dividends. Return may increase or decrease as a result of currency fluctuations. CR12178/08-19. **Return may increase or decrease as a result of currency fluctuations.** CR09911/07-19

# Sector valuations fair, fundamentals sound, sentiment low



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