

SCIENCE AND INNOVATION SITE-VISIT

May 16, 2023

THE SCIENCE OF HEALTH THROUGH FOODS

Isabelle Esser
Chief Officer R&I and QFS





WELCOME TO THE DANIEL CARASSO RESEARCH & INNOVATION CENTER



FLAGSHIP RESEARCH & INNOVATION CENTER

A STATE-OF-THE-ART BUILDING

OUR R&I CENTER IS CONTRIBUTING TO AND LEVERAGING A POWERFUL ECOSYSTEM OF ACADEMICS, COMPANIES AND PARTNERS

ANCHORED IN THE WORLD'S 8TH LARGEST INNOVATION CLUSTER



Top tier academic cluster Excellent research & facilities Vibrant innovation ecosystem



CONNECTED WITH A VIBRANT AND DIVERSE ECOSYSTEM

ACADEMIA

for knowledge generation

INDUSTRY PLAYERS

for application

STARTUPS

for incubation

With academics ¹



























WE HAVE POWERFUL ASSETS BUILT ON A LONGSTANDING HISTORY



1700 WORLD CLASS EXPERTS
1 GLOBAL CENTER LOCATED IN 2 SITES
6 SPECIALIZED HUBS
1 HIGHLY CONNECTED NETWORK





DANONE'S ROOTS ARE ABOUT DIFFERENTIATION THROUGH SCIENCE







EXPERTISE IN FERMENTS, GUT HEALTH, BIOTICS







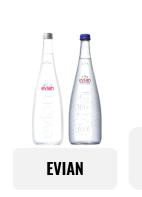


EXPERTISE IN IMMUNITY, ALLERGY, BREASTMILK, MEDICAL NUTRITION





EXPERTISE IN HYDRATION, ANALYTICS, PACKAGING, SUSTAINABILITY





WE HAVE UNIQUE CAPABILITIES TO DEMONSTRATE AND CLAIM THE BENEFITS OF OUR PRODUCTS ACROSS CATEGORIES

Demonstrating benefits

> 100 clinical studies

> 150 scientific publications and poster presentations at scientific congresses annually

From Global science to Local relevance

Enhancing global evidence with locally generated data





Patenting our differentiated products

> 500 patent families

~ 5000 patents and patent applications across categories

















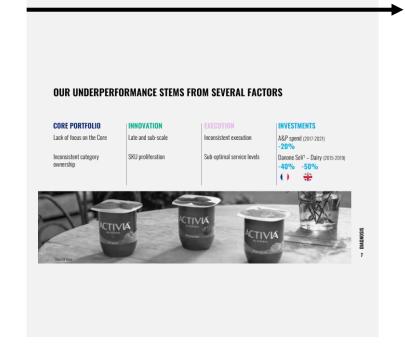
Connect (Alzheimer's

Syneo (allerg / allergic ris Actisyn muscle function

oser to astmilk ¹ & texture in (fat product Gastrointestin comfort Immunity

YET, WE HAVE BEEN UNDERLEVERAGING RESEARCH & INNOVATION

EXTRACT FROM DANONE CME (MARCH 2022)



ON RESEARCH & INNOVATION SPECIFICALLY, WE HAVE THE OPPORTUNITY TO RESTORE...

FOCUS

CONSISTENCY

IMPACT

LONG-TERM VISION

CONFIDENCE



WE NOW HAVE A CLEAR STRATEGY, AT THE SERVICE OF CONSUMERS AND PATIENTS AT ALL LIFE STAGES





STARTING FROM CONSUMERS AND PATIENTS AND LEVERAGING SCIENCE, WE DEVELOP SUPERIOR, DIFFERENTIATED PRODUCTS AND SERVICES

CONSUMER & PATIENT CENTRIC DESIGN

Consumers



Patients



SUSTAINABLE BY DESIGN

Health & Nutrition

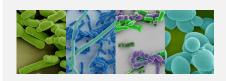


Decarbonation



DIFFERENTIATING SCIENCE & TECHNOLOGY

Life sciences



Multiply through Innovation & Science eco-systems



DIGITALLY DRIVEN

Data, Simulation, Modeling





ONE TALENT POWERHOUSE

To win today and tomorrow





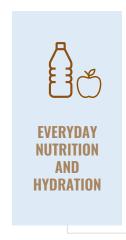






WE LEVERAGE OUR SCIENCE AND TECHNOLOGY ON ON-TREND BENEFIT PLATFORMS THAT OFFER COMPELLING FUTURE GROWTH PROSPECTS











IMMUNITY & ALLERGY



GUT HEALTH



PHYSICAL ENERGY & PERFORMANCE



MENTAL WELLBEING & BRAIN HEALTH



RECOVERY

... SERVED BY **DANONE SCIENCE** AND TECHNOLOGY **ASSETS**

BIOTECHNOLOGY & FUNCTIONAL INGREDIENTS

BIOTICS & FERMENTATION **NUTRITION**

HYDRATION & WATER SCIENCE

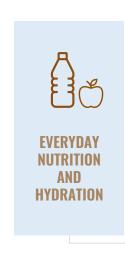
PACK DECARBONATION & CIRCULARITY

COGNITIVE & BEHAVIORAL SCIENCE

ARTIFICIAL INTELLIGENCE & DIGITAL

LET'S DEEP-DIVE ON GUT, BIOTICS AND FERMENTATION...







CHILDREN'S GROWTH





GUT HEALTH

DEEP-DIVE



PHYSICAL ENERGY & PERFORMANCE



MENTAL WELLBEING & BRAIN HEALTH



RECOVERY

... SERVED BY DANONE SCIENCE AND TECHNOLOGY ASSETS

BIOTECHNOLOGY & FUNCTIONAL INGREDIENTS

BIOTICS & FERMENTATION

NUTRITION

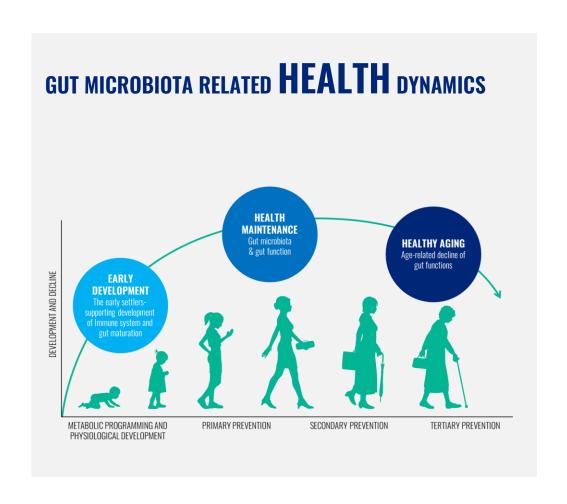
HYDRATION & WATER SCIENCE

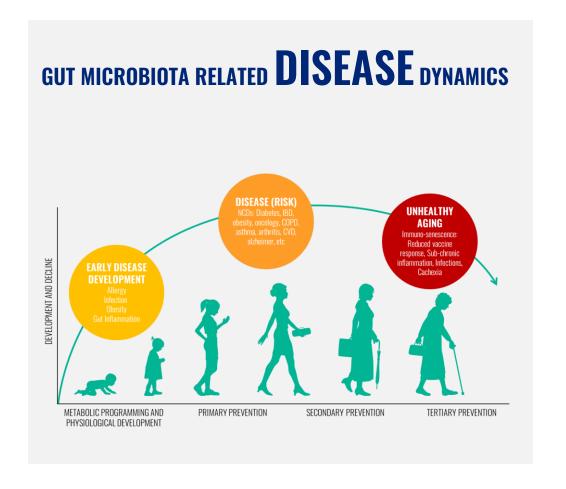
PACK
DECARBONATION
& CIRCULARITY

COGNITIVE & BEHAVIORAL SCIENCE

ARTIFICIAL INTELLIGENCE & DIGITAL

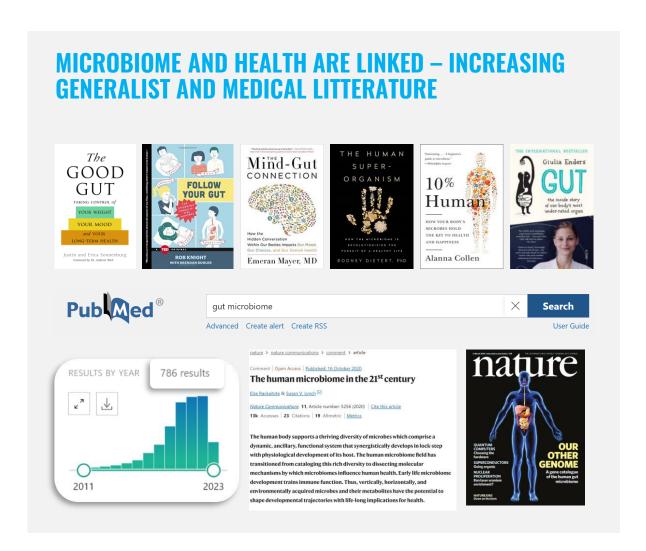
IT IS KNOWN THAT GUT MICROBIOME HAS AN IMPACT ON HEALTH AND DISEASE THROUGHOUT LIFE





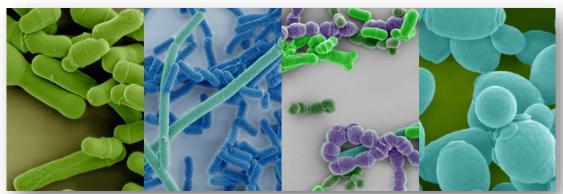
GUT HEALTH & MICROBIOME ARE GAINING TRACTION AMONG CONSUMERS AND THE MEDICAL COMMUNITY

INCREASING CONSUMER INTEREST FOR GUT HEALTH Google GLOBAL INTEREST X3 2004 2010 2017 2022 HEALTHY SLEEP HEALTHY SKIN



DESIGNING SUPERIOR SOLUTIONS: WE HAVE UNIQUE SCIENCE TO CHAMPION THE GUT HEALTH CONVERSATION

UNIQUE & DIFFERENTIATING PROPRIETARY STRAIN COLLECTION





WE HAVE A UNIQUE KNOW-HOW TO APPLY THEM AND ADDRESS CONSUMER AND PATIENT NEEDS

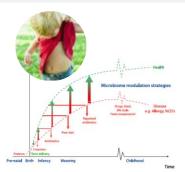
FROM SCIENCE AND TECHNOLOGY TO PERSONALIZED NUTRITIONAL SOLUTIONS

Gut Health



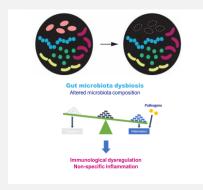
Support and improve gut health and overall wellbeing

Children growth



Maintain key microbiota and restore compromised microbiome development

Everyday nutrition and recovery



Protect the microbiome

Immunity & Allergy



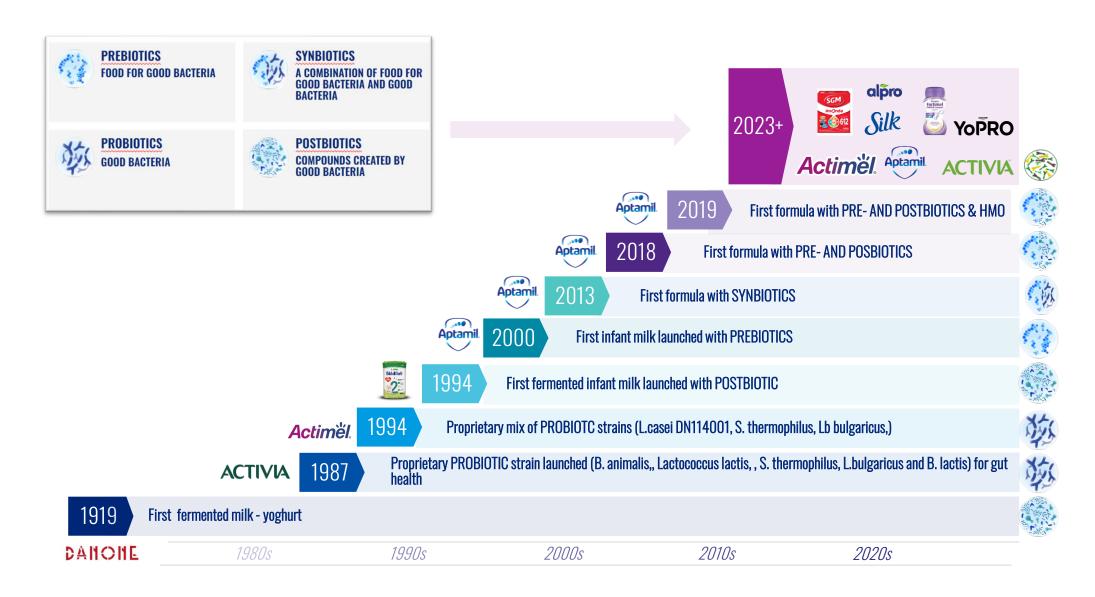
Modulate the microbiome

Personalization



Support personalization

BUILT ON MORE THAN 100 YEARS OF SCIENCE-BASED INNOVATION IN FERMENTS AND BIOTICS



OUR SCIENCE AND TECHNOLOGY ASSETS ALREADY IMPACT OUR GROWTH AND COMPETITIVENESS

PERSONALIZED FEEDING JOURNEYS



INFANT MALNUTRITION AND WEIGHT LOSS



IMMUNITY ACROSS GENERATIONS



HOLISTIC GUT HEALTH



ALLERGY MANAGEMENT



IMPROVE GUT HEALTH AND DISEASE OUTCOME



PHYSICAL ENERGY AND PERFORMANCE MANAGEMENT



HYDRATION AND PACKAGING



WE HAVE A CLEAR MID-TERM ROADMAP, WITH RESEARCH & INNOVATION BACK AT THE CENTER OF RENEW DANONE

01

Win where we are

- Leverage our strong and differentiating assets
- Focus on the Core: Gut health, Immunity, Closer to Breastmilk, Hydration
- Boost the Winners: Adult nutrition, Pediatric Specialties, High Protein

02

Expand where we should be

- Leverage biotech assets across categories
- Scale our platforms across geographies

03

Seed the future

- Develop advanced products & solutions from existing assets
- Explore new frontiers in biotechnology
- Digital health and personalization

DANONE SPECIALIZED NUTRITION

SCIENCE THAT IMPACTS HEALTH IN KEY MOMENTS OF LIFE

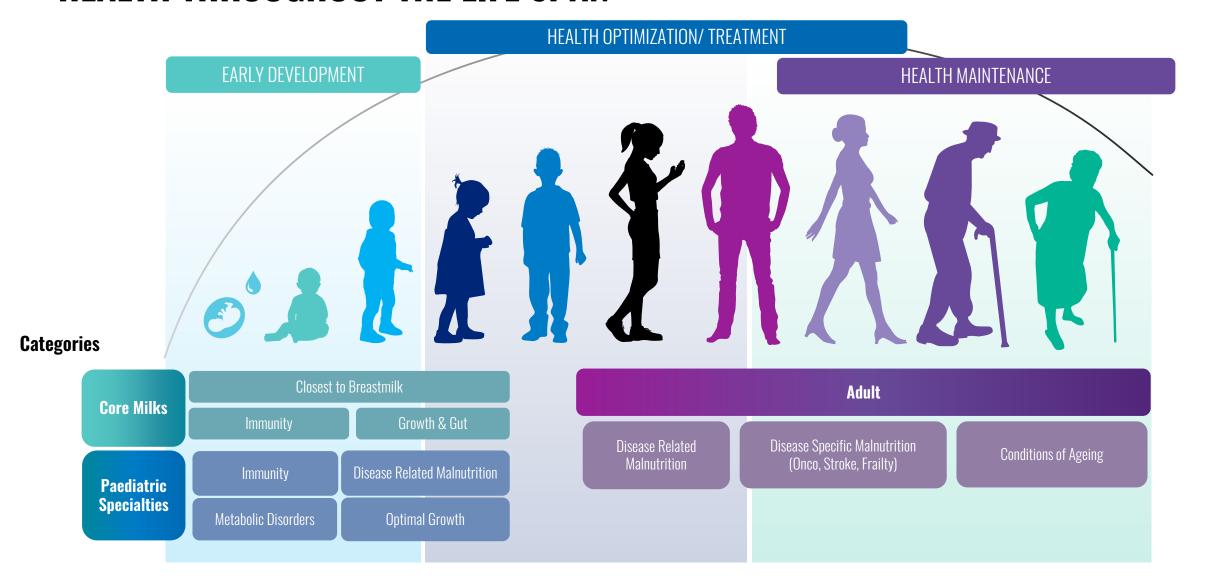
Jean-Marc Magnaudet
President Specialized Nutrition





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A UNIQUE BUSINESS MODEL THAT IMPACTS CONSUMERS AND PATIENTS HEALTH THROUGHOUT THE LIFE SPAN



WE VALORIZE OUR SCIENCE AROUND MULTIPLE BENEFIT PLATFORMS

DIFFERENTIATED SCIENCE ENGINES DRIVING SUPERIORITY TO WIN MARKET SHARE AND IMPACT HEALTH

BENEFIT PLATFORMS

















NUTRITIONAL

STANDARDS













































WITH AN INNOVATION ECOSYSTEM ANCHORED IN SCIENCE, TECHNO AND MEDICAL THOUGHT LEADERSHIP FOR SUSTAINED AND COMPETITIVE VALUE CREATION



IN EARLY LIFE, WE SERVE THE NEEDS OF EVERY FEEDING JOURNEY THROUGH TAILORED BIOTICS AND SCIENCE-BASED PORTFOLIOS

PLANT BASED





CLASSIC







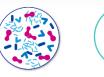
MIXED FEEDING



used in combination with breastmilk

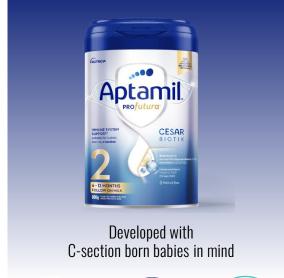






POSTBIOTICS HMO. 2'-FL

C-SECTION & IMMUNOCARE









PREBIOTICS

PROBIOTICS

HMO. 2'-FL

REDUCED INFECTIONS BY 30% *

8 x LESS COLICS *

BETTER TOLERANCE *

8 x LESS SKIN SYMPTOMS *

LEVERAGING DANONE TECHNOLOGIES, DATA AND DIGITAL CAPABILITIES DIGITAL HEALTH SOLUTIONS MAKE THE IMPACT OF OUR PRODUCTS VISIBLE

Gut health



- Stool tracker -> Microbiome personalized nutrition
- Stool consistency and colour are an indicator of children's health, but parents find it difficult to recognise
- Patented stool tracker developed and validated with experts





Real world application showed **Aptamil babies has less hard stools** compared to the ones using other Chinese brands

Nutrition visible to consumer: >3M usage and the world largest baby stool pic database





Machine Learning Supports Automated Digital Image Scoring of Stool Consistency in Diapers

Thomas Ludwig ¹, Ines Oukid ², Jill Wong ¹, Steven Ting ¹, Koen Huysentruyt ³, Puspita Roy ¹, Agathe C Foussat ¹, Yvan Vandenplas ³



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A LONG-TERM SCIENCE-BASED PRODUCT LIFE CYCLE MANAGEMENT

Next Step

Nuturis - CTBM*

2019

Human Milk Oligosaccharides – Immunity

2013

Synbiotics – Immunity

2008

Postbiotics – Digestive Health

2002

Prebiotics – Closer to Breast Milk

1992

Fat - DHA

2000

Protein



HIGHLY RELEVANT TO ADDRESS THE NUTRITIONAL NEEDS OF THE GROWING POOL OF ADULT PATIENTS WITH CANCER, STROKE & FRAILTY

Address specific nutritional need of patients with **DISEASE-RELATED MALNUTRITION**





ONCOLOGY

20 million new cases a year

STROKE

12 million new cases a year

FRAILTY

174 million cases now

Demonstrate SUPERIOR HEALTH BENEFITS



IMPROVED NUTRITIONAL STATUS

> High protein for superior compliance





IMPROVED ENERGY & PHYSICAL PERFORMANCE

- > Increase muscle mass & strength
- > Reduce fatigue for better recovery





IMPROVED GUT HEALTH

- > Biotics to modulate gut microbiota
- > Improve digestibility & reduce inflammation



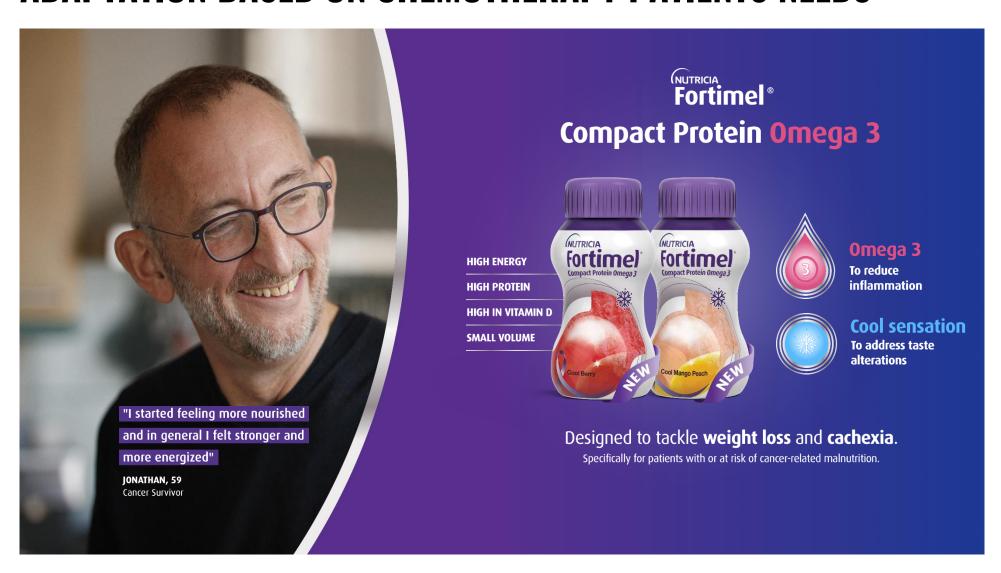


IMPROVED BRAIN HEALTH

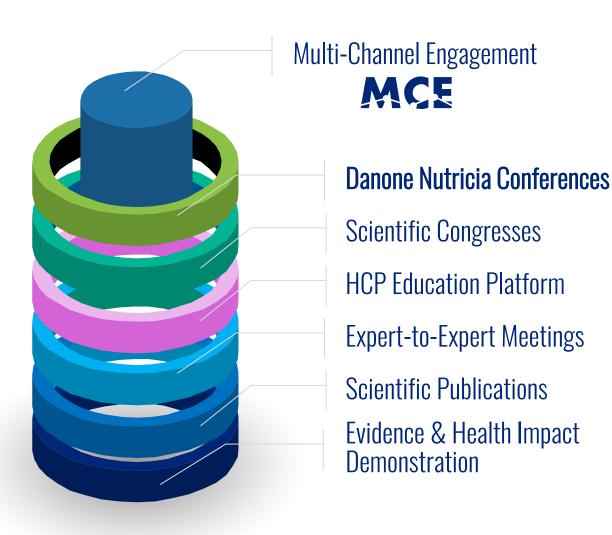
- > Nourishes brain connections
- > Improves memory
- > Slows down cognitive decline



PIONEERED WITH SOLUTIONS SUCH AS COMPACTIZATION AND SENSORY ADAPTATION BASED ON CHEMOTHERAPY PATIENTS NEEDS



ACTIVATING OUR SCIENCE THROUGH HEALTHCARE PROFESSIONALS' EDUCATION AND ENGAGEMENT















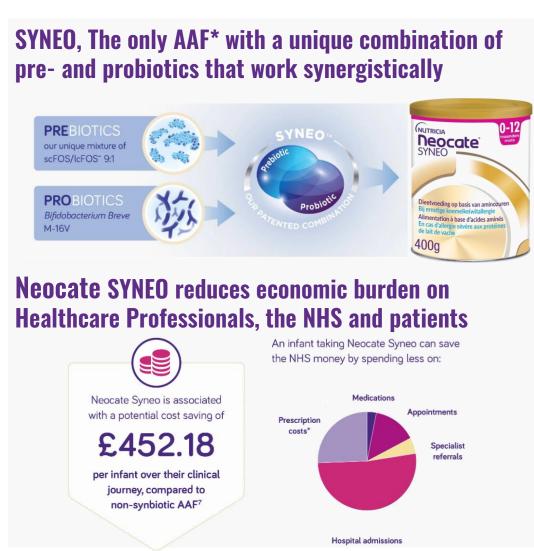
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DRIVING SUPERIORITY AND PROVING HEALTH ECONOMICS BENEFITS

SYNEO, UNIQUE COMBINATION OF PRE- AND PROBIOTICS THAT REDUCES THE BURDEN OF INFANTS SUFFERING ALLERGIES

neocate





BRINGING HEALTH THROUGH FOOD TO AS MANY PEOPLE AS POSSIBLE

WITH

WORLD CLASS SCIENCE





TO ACCELERATE GROWTH AND BUILD RESILIENCE IN CHINA

Bruno Chevot

President Greater China, North Asia and Oceania





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Back to competitive growth

CHINA IS A CRITICAL MARKET FOR DANONE, WITH ROOM TO GROW FURTHER AND WIN WHERE WE ARE

€27 bn

NON-ALCOHOLIC

RTD BEVERAGE³

	HIGH POTENTIAL CATEGORIES		DANONE OPPORTUNITIES
	2022 retail value	Mid-term growth trajectory	
INFANT MILK FORMULA ¹	€23 bn	Softer dynamics due to negative birth rate	Value up and gain share in a market that will consolidate
PAEDIATRIC SPECIALTIES	€3 bn	High-single digit up thanks to penetration catch up to high prevalence	Continued expansion to increase penetration
ADULT MEDICAL NUTRITION ²	€3 bn	Double-digit up based on demographics and enteral penetration gains	Expanding in community post discharge
NON ALCOHOLIC		Mid-single digit up	

very large and growing ahead of

FMCG thanks to demand for functionality and innovation

WE HAVE BUILT 4 WINNING, RESILIENT AND DIFFERENTIATED PLATFORMS

LEADING POSITIONS

Danone 2022 position

STRONG REACH

2022 scale of usage



INFANT MILK FORMULA¹



#1

Multinational IMF

#2

Infant Milk Formula

c. 10%

of Urban Chinese babies



PAEDIATRIC SPECIALTIES



#1

Allergy Paediatric

#2

Paediatric Specialties

c. 140k

of Urban Chinese Babies



ADULT MEDICAL NUTRITION²





#1 Adult tube feeding **#2**

Adult Medical Nutrition

c. 90%

of top tier hospitals covering 55% of patients



NON-ALCOHOLIC RTD BEVERAGE³



#1

Brand Vitamins & Sports drinks

#5

Brand RTD Non-Alcoholic Beverage

c. **350**m

of Chinese adults 15yo+

WE ARE ACCELERATING LOCAL EVIDENCE GENERATION, LEVERAGING GLOBAL SCIENCE, TO DRIVE OUR RESILIENCE IN CHINA

GLOBAL SCIENCE, LOCAL EVIDENCE...



Leveraging global-local network to accelerate delivery

- 16 randomized controlled trials (RCTs) in China

Collected real world evidence on **700k** consumers & patients in China

- 12 GLO-CAL patents filed, global experts with Chinese inventors
- **9** Digital health services

... AS A PERFORMANCE DRIVER

- Driving brand **leadership**, powered by strong **evidence**based claims
- Establishing IMF **registration** and pharma **licences renewal** as a competitive advantage
- Leveraging digital health-tech, making our benefits tangible to consumers and embarking healthcare **professionals** on real-world evidence

DRIVING BRAND SUPERIORITY POWERED BY STRONG EVIDENCE-BASED CLAIMS

INFANT MILK FORMULA

#1 BRAND FOR IMMUNITY, ADVANCED SCIENCE, CLOSER TO BREAST MILK¹

Improved microbiome

Better gut immune function

Proven long lasting immune effect on C-section babies

Most recommended for C-section by healthcare professionals in Hong-Kong





PAEDIATRIC ALLERGY

#1 BRAND FOR PAEDIATRIC ALLERGY RECOMMENDATION²

Consensus Neocate-first (amino acid)

Contributing to guidelines with ministry of health

for healthcare professionals

Infants outgrow allergy (62% tolerate cow milk in 2 years)



ADULT MEDICAL NUTRITION

#1 BRAND FOR HOSPITAL TUBE FEEDING³

Better survival rates in oncology, **faster recovery** from gastrointestinal conditions

Improved nutrient absorption

in gastro intensive care patient's vs regular tube feeding

Accelerating post discharge with home care





SUPERIOR SCIENCE AND IMF REGISTRATION ARE STEP-CHANGING OUR ABILITY TO FURTHER DRIVE VALUE-ADDING INNOVATIONS

CURRENT RANGE

Price Index **100**

CLOSER TO BREAST MILK

Price Index ~115

EVEN CLOSER TO BREAST MILK

Price Index ~130

NEXT

PATENTED, PROVEN, PROPRIETARY





For Big Brand Seekers



For Absorption



PATENTED, PROVEN, PROPRIETARY

SYNEO™ Long lasting

Immunity engine









NEW

For Digestive Comfort

PATENTED, PROVEN, PROPRIETARY NUTURIS™ **Next Gen closer to Chinese Breast Milk**

>30 Global Patent families

PROVEN

Other functional engines

4 Glo-cal patents filed



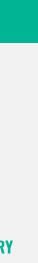
For Mixed Feeding











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PAEDIATRIC SPECIALTIES REGISTRATION SUCCESS IS OPENING UP OUR PORTFOLIO TO FURTHER GROW PENETRATION

POTENTIAL TO DOUBLE ALLERGY TREATMENT

2.3%

Category Penetration¹ VS

c. **6**%

Prevalence

NEW 2023



Neocate™ AAF FIRST FOR DIAGNOSIS



Neocate ™ eHF

ALLERGY MANAGEMENT DEVELOPING TOLERANCE TO PROTEIN

ALSO NUTRITION FOR GASTROENTERIC CONDITIONS

POTENTIAL TO DE-MULTIPLY CHALLENGED GROWTH

0.7%

Category Penetration² c. **5**%

Prevalence



Infatrini™ completes nutrition for

DISEASE RELATED MALNUTRITION

(100% of Nutritional needs under 1 year)

SECURING PHARMA LICENCE AND FURTHER DRIVING **ADULT MEDICAL NUTRITION**

MEDICAL PHARMA LICENCE RENEWAL AND ENTRY INTO A-FSMP¹ FOR HOSPITAL INTO COMMUNITY



8 pharma licence renewed for 5 years



3 ADULT FSMP¹ NOW REGISTERED





















PROPRIFTARY

in gastroenterology and beyond



60-70%

of Chinese patients at risk of malnutrition

37% receiving nutritional support

1.6% malnourished patients use a FSMP¹

MAKING OUR BENEFITS TANGIBLE TO HEALTHCARE PROFESSIONALS AND CONSUMERS, THROUGH DIGITAL HEALTH-TECH AND REAL-WORLD EVIDENCE

A VIRTUOUS MODEL CONVINCING HEALTHCARE PROFESSIONALS AND CONSUMERS

MAKING OUR BENEFITS TANGIBLE TO USERS EMBARKING HEALTHCARE PROFESSIONALS ON REAL WORLD EVIDENCE GENERATION



GENERATING CLAIMS TO REINFORCE OUR BRAND SUPERIORITY

APPLIED ACROSS OUR SPECIALIZED NUTRITION CATEGORIES



APTAMIL STOOL TRACKER

used by **1.28m parents** (UV) to assess their baby's gut immune function, proven to drive **+10% incremental retail sales**



BREASTFEEDING COACH

with 2 patents filed on Al/AR, **95% users increased their** breastfeeding confidences



APTA ESSENSIS U

Al personalized nutrition with DNA and dietary assessment, driving **+28% incremental preference for Aptamil**



GANMA

launched together with GanMai products, **daily tracking of 5 key health areas** (gut, diet, mood, sleep and exercise)





定制化营养解决方案 Personalized Nutrition Solution

OUR SCIENCE MODEL IS ALREADY UNLOCKING NEW GROWTH OPPORTUNITIES IN LESS REGULATED CATEGORIES

DEMONSTRATING MIZONE SUPERIORITY



Mizone first real-world evidence study showed

40% improvement in reaction time

SUPPORTING HEALTHY AGEING BENEFITS





95% of users report a better gut health

confirmed by **291** Chinese HCPs

WE CONTINUE TO LEVERAGE OUR SCIENCE ASSETS ACROSS THE LIFE SPECTRUM, DEMONSTRATING OUR CONTRIBUTION TO 'HEALTHY & BEAUTIFUL CHINA"



IN LINE WITH 20TH CPC CONGRESS COMMITMENTS

Health & Nutrition

"A healthy population symbolizes national prosperity and revitalization"



Focus to reduce chronic diseases, starting with prevention by 2030



Achieve balanced allocation of high-quality medical and health resources



Accelerate Health innovation in China for China and the world

REDUCING PAEDIATRIC INFECTIONS

IMPROVED IMMUNITY



HEALTH DATA PAVING THE WAY

FOR HEALTH ECONOMICS

IMPROVED MICROBIOME OUALITY AND DIVERSITY

REDUCING OPPORTUNISTIC PATHOGENS

MINIMISING C-SECTION CHALLENGES



LESS TIME IN INTENSIVE CARE UNITS

IMPROVE SURVIVAL RATE

SUPPORTING HOME CARE

OUR GLOBAL SCIENCE LOCAL EVIDENCE MODEL WILL BE CRITICAL TO UNLOCK FURTHER GROWTH WITH TARGETED, DIFFERENTIATED CATEGORY EXPANSION

BENEFIT PLATFORMS















CAPABILITIES

- Driving brand **leadership** powered by strong **evidence-based claims**
- Establishing IMF registration and pharma licences renewal as a competitive advantage
- ✓ Leveraging digital health-tech, making our benefits tangible to consumers and embarking healthcare professionals on real-world evidence

SCIENCE ASSETS









CATEGORY







ADULT MEDICAL









NUTRITIONAL DRINKS5

CHINA MINISTRY OF COMMERCE VISITING DANONE R&I PARIS SACLAY INNOVATION CENTER APRIL 2023







DANONE CEO & DEPUTY CEO VISIT TO SHANGHAI CHINA DANONE R&I OPEN SCIENCE RESEARCH CENTER MARCH 2023



CEO CONCLUSION

Antoine de Saint-Affrique Chief Executive Officer





WE HAVE CUTTING EDGE SCIENCE THAT TRAVELS ACROSS OUR PORTFOLIO OF CATEGORIES AND GEOGRAPHIES

CONSUMER AND PATIENT BENEFIT PLATFORMS...

SCIENCE AND





TECHNOLOGY ASSETS















BIOTICS & FERMENTATION

NUTRITION

HYDRATION & WATER SCIENCE

PACK DECARBONATION & CIRCULARITY

COGNITIVE & BEHAVIORAL SCIENCE

ARTIFICIAL INTELLIGENCE & DIGITAL







iff

ACADEMICS













SCIENCE AND EXECUTION DISCIPLINE ARE BACK AT THE HEART OF HOW WE SERVE OUR CONSUMERS AND PATIENTS

CONSUMER AND PATIENT-CENTRICITY

PROPRIETARY,
DIFFERENTIATING
SCIENCE

EXECUTION DISCIPLINE ACROSS THE VALUE CHAIN

DEPLOYED ACROSS CATEGORIES AND BRANDS

























DRIVING VALUE CREATION THROUGH IMPACTFUL INNOVATION, POWERED BY END-TO-END EXECUTION DISCIPLINE



BETTER QUALITY GROWTH - SUSTAINABLE RETURNS - LONG TERM VALUE CREATION



SCIENCE AND INNOVATION SITE-VISIT

May 16, 2023