



*“Expanded capabilities,  
improved commercial  
outcomes”*

2022

**INVESTOR  
PRESENTATION**

**24 November 2022**

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# CORPORATE INFORMATION

Resonance Health provides medical devices and services for non-invasive assessment of organ health. We accurately assess organ-iron and organ-fat, and other organ-biomarkers. Our services are used by clinicians and patients globally, facilitating interventions that can slow, stop, or reverse disease progression.

Pharma use our regulatory-cleared and research-use software-medical-devices and ISO compliant central lab services in their clinical drug trials. Better organ health, enabled by non-invasive, affordable organ-assessment will save billions in healthcare costs and improve and extend the lives of people globally.

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*“Enhancing shareholder value through commercialising new work streams, innovating our services to enhance their marketability and usability, and investing sensibly in high-impact R&D”*

Martin Blake, Chairperson

## Shareholder Information

ASX Code:	RHT
Ordinary Shares on Issue:	461.1M
Market Cap (at SP \$0.07):	\$32.3M
Enterprise Value (at SP \$0.07):	\$25.3M
Board + Management Holding:	20.1%
Top 20 Shareholders:	40.7%

## Management Team

Managing Director:	Mr Mitchell Wells
COO + CFO:	Mr Nick Allan
CSO Imaging + AI:	Dr Wenjie Pang
CSO Molecular Medicine:	Dr Sherif Boulos
GM Quality + Regulatory:	Ms Virginia Atkinson
GM Innovation + Projects:	Mr Chad Tondut
GM BD + Clinical Engagement:	Dr Sofie De Meyer
Chief Technology Officer:	Mr Ben Winters

# THE WHY – ENDEMIC LIVER DISEASE

## LIVER DISEASES

## GROWTH IN LIVER DISEASE MORTALITY



### Fatty Liver Disease

Associated with obesity, diabetes, hypertension. **25% of global population\***



### Iron Overload Diseases

250M haemoglobin disease gene carriers **400K carrying infants born globally p/a\***



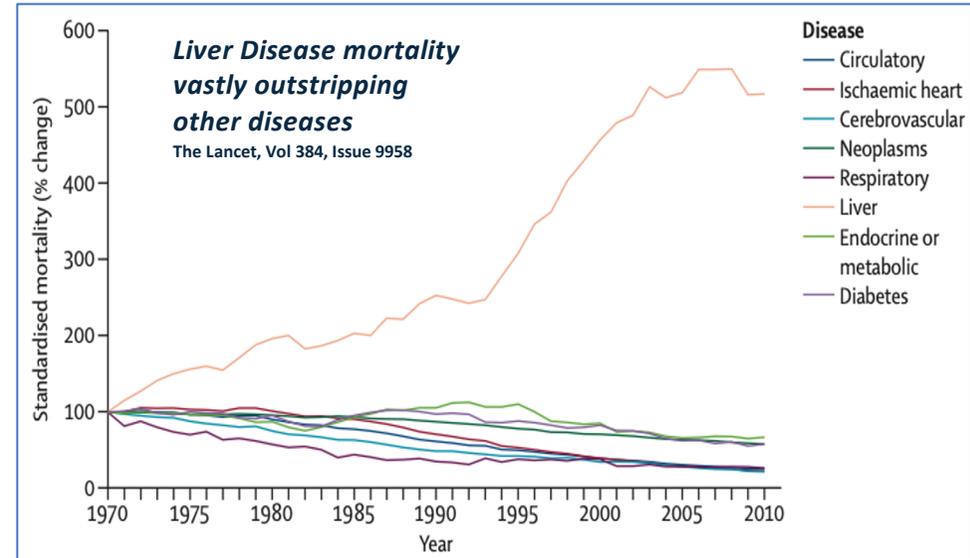
### Liver Cancer (HCC)

4th most common cause of cancer death **906K new cases + 830K deaths globally p/a\***

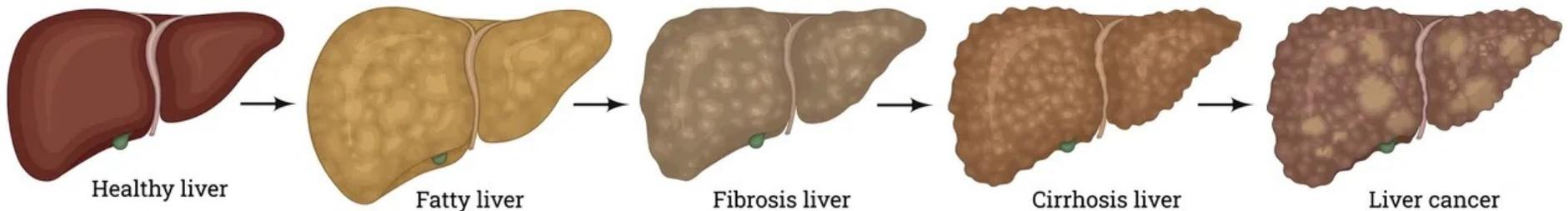


### Causes of Liver Disease

Genetics, obesity, alcohol consumption, iron-overload viral infections, lifestyle



## PROGRESSION OF LIVER DISEASES



*“Liver disease is a leading cause of death worldwide and a huge burden on global health systems, but many liver diseases can be reversed with early intervention, which is possible using non-invasive imaging analysis methods and blood biomarkers to guide patient detection and staging of severity of liver fibrosis”.* Prof. John Olynyk, Chief Medical Officer

# THE HOW – LIVER ASSESSMENT

## RESONANCE HEALTH



### CENTRAL (DRY-LAB) SERVICES\*

### CLINICAL TRIAL SERVICES

### CENTRAL (WET-LAB) SERVICES\*

#### IMAGING MEDICAL DEVICES

#### CRO TRIAL MANAGEMENT

#### BIOMEDICAL ANALYSIS

- 6 regulatory cleared medical devices
- >80,000 patient reports provided
- Reimbursement in key markets
- Over 50 clinical studies serviced

- Decades of experience in clinical trials
- Increasing demand for CRO services
- Capitalise on expanding marketplace
- Australia increasingly sought for trials

- New wet-lab established in Perth WA
- Consolidation of labs into single lab
- Monetising molecular medicine R&D
- New equipment installation in progress

*\*See description of dry and wet labs at Annex A*

***“Resonance Health improves and extends lives by providing outstanding service provision in (i) medical imaging analysis (ii) biomedical laboratory analysis, and (iii) CRO trial management to pharmaceutical companies; expanded capabilities for improved commercial outcomes.”***

Mitchell Wells, Managing Director

# IMAGING ANALYSIS (DRY-LAB) SERVICES

## CORE LAB SERVICE



- Analyses liver-iron-concentration
- Global gold standard for liver iron
- >70,000 patient reports delivered
- CE Marked and ARTG Listed
- US FDA regulatory cleared



- Analyses cardiac (heart) iron
- Most widely used method for this
- >20,000 patient reports delivered
- CE Marked and ARTG Listed
- US FDA regulatory cleared



- Analyses liver-iron-concentration
- AI assisted for rapid assessment
- Calibrated using FerriScan
- CE Marked and ARTG Listed
- US FDA regulatory cleared



- Analyses liver fat + distribution
- Maps and quantifies fat metrics
- ISO compliant central lab analysis
- CE Marked and ARTG Listed
- US FDA regulatory cleared



- Analyses liver-iron and liver-fat
- Combines FerriScan + HepaFat
- ISO compliant central lab analysis
- CE Marked and ARTG Listed
- US FDA regulatory cleared



- Analyses liver fat + distribution
- AI assisted for rapid processing
- Also provides steatosis grading
- CE Marked and ARTG Listed
- US FDA regulatory cleared



- Analyses organ volume using MRI
- Standardized across MRI models
- Application to drug clinical trials
- ISO compliant central lab analysis
- US FDA regulatory cleared



- Analyses bone marrow iron level
- Standardized across MRI models
- Application to marrow transplant
- ISO compliant central lab analysis
- US FDA regulatory cleared



- Analyses liver-iron and live- fat
- AI assisted for rapid processing
- Combines FerriSmart + HepaF-AI
- US CPT code for reimbursement
- US FDA regulatory cleared

## ARTIFICIAL INTELLIGENCE

*“Resonance Health’s medical imaging analysis services and software-medical-devices are widely used in clinical diagnosis and management by clinicians, and by pharma in trials seeking new drugs and methods to treat diseases including NAFLD which affects around 30% of the global population, and blood diseases affecting millions of people.*

*Fatty liver disease is endemic, and there is a race-on for new drug treatments to address it. Our artificial intelligence (AI) enabled solutions can deliver medical image analysis results instantly and improve hospital and radiology workflow with better patient outcomes.”*

Dr Wenjie Pang – Chief Scientific Officer

# IMAGING ANALYSIS (DRY-LAB) SERVICES

## RESEARCH SERVICES

### OrganFe-Scan

- Analyses organ-iron using MRI
- Including brain, kidney, pancreas
- ISO compliant central lab analysis
- Application to drug clinical trials

### OrganFat-Scan

- Analyses organ-fat using MRI
- Including pancreas and spleen
- ISO compliant central lab analysis
- Application to drug clinical trials

Our organ-scan services are for investigational-use only, used as research tools in studies. Depending on customer needs we can tailor the acquisition protocol to suit the organ.

## MRI CALIBRATION DEVICES

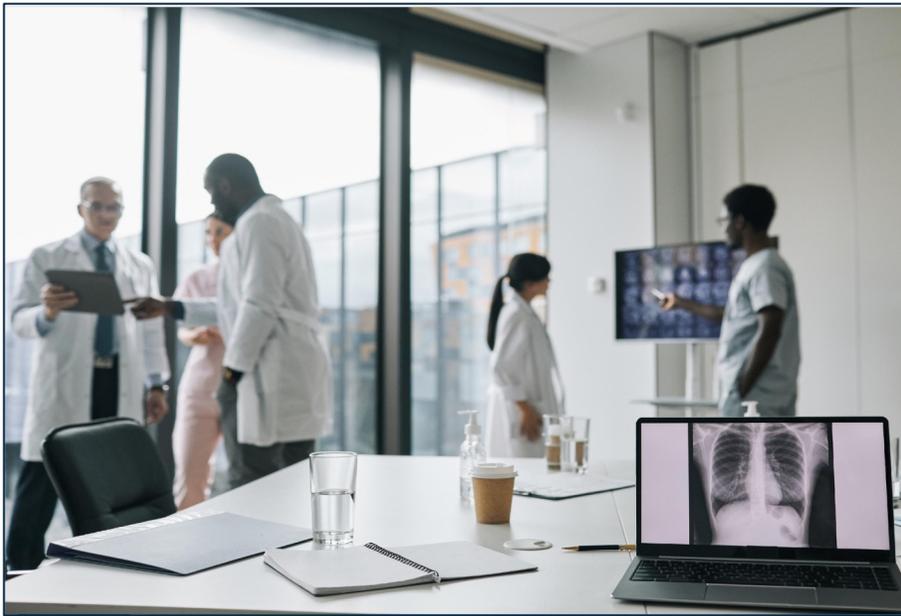
### T1CMR Phantom

- T1MES phantom for T1+ECV map
- Used to correctly calibrate MRI
- Standardized across MRI models
- Application to drug clinical trials
- US FDA cleared + CE Marked

### T2CMR Phantom

- T2MES phantom for T2+ECV map
- Used to correctly calibrate MRI
- Standardized across MRI models
- Application to drug clinical trials
- Experimental and research use

We manufacture phantoms for calibrating MR machines, quality assured under ISO 13485:2016 for medical devices. Other tailor-made phantom products can be manufactured on request.



# CLINICAL TRIAL MANAGEMENT + CRO SERVICES



Resonance Clinical



Resonance Clinical provides objective, reproducible, and quantitative CRO services for multi-national and multi-center clinical trials. From trial design and study protocol development to project management and monitoring, our experienced team provides end-to-end solutions.

- Clinical trial management
- Trial Protocol development
- Data management + biostatistics
- Medical safety + pharmacovigilance
- Medical affairs + communications
- Quality assurance + regulatory
- Clinical operations + central lab services

**+18**   **+250**   **+53**  
YEARS   SITES   COUNTRIES

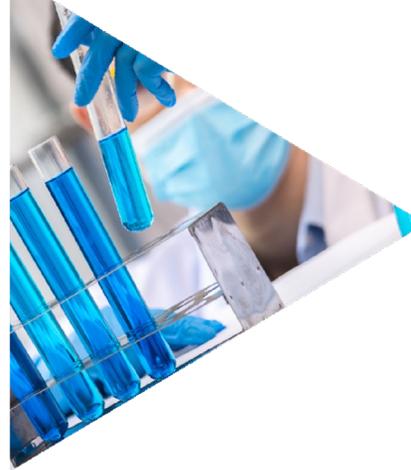
*“Resonance Clinical is a new commercial initiative aimed at the lucrative and expanding global clinical trial marketplace, especially for the treatment of liver diseases such as NAFLD, which affects up to 30% of the world population.*”

*Through leveraging our scientific and clinical credentials in drug development we aim to deliver a high-level service to new and existing clients of Resonance Health.”*

Dr Sherif Boulos, Project Director-Resonance Clinical



# BIOMEDICAL CENTRAL (WET-LAB) SERVICES



*“In addition to standard biochemical + novel biomarker endpoints, our central wet-lab can offer disease associated panels for:*

- *Liver Disease*
- *Haematology*
- *Metabolic, Obesity + Diabetes*
- *Reproductive Endocrinology*
- *Oncology*
- *Neurology*
- *Inflammation*
- *Viral Disease”*

*Dr Sofie De Meyer, GM – BD + Clinical Engagement*

## CENTRAL WET-LAB

From biomarkers to genotyping the new Central Wet-Lab will provide a range of clinical and pre-clinical services, including:

- Sample reception, tracking and storage
- Post collection processing of urine, blood, plasma, serum + tissue
- Comprehensive list of biomarker assays + customised assays
- Genotyping, sequencing, mutation + copy number analysis
- Target specific mRNA/protein expression analysis
- Existing MRI imaging calibration Phantom production

In addition, we can partner with 3<sup>rd</sup> party pathology services for sample collection and safety assessments in clinical trial work.

[www.resonanceclinical.com](http://www.resonanceclinical.com)



# R&D + INNOVATION - VALUE INFLECTION POINTS

Core Lab Services		Innovation	Proof of Concept	IP Protection	Clinical Validation	Regulatory	Commercialisation	
 <b>FerriScan</b> <sup>®</sup> <small>MRI Measurement of Liver Iron Concentration</small>	Shorter Acquisition Sequence (1.5 mins)	[Progress bar: ~75%]						
 <b>Cardiac T2*</b>	3T Scanner Calibration	[Progress bar: ~75%]						
 <b>LiverScan</b> <small>Powered by Resonance Health</small>	Shorter Acquisition Enhancement + Steatosis	[Progress bar: ~60%]						
 <b>HepaFat-Scan</b> <sup>®</sup> <small>MRI Measurement of Liver Fat</small>	Enhancement + Steatosis	[Progress bar: ~95%]						
AI Services		Innovation	Proof of Concept	IP Protection	Clinical Validation	Regulatory	Commercialisation	
 <b>FerriSmart</b> <sup>®</sup>	Shorter Acquisition & 3T Calibration	[Progress bar: ~75%]						
 <b>Cardiac T2* AI</b> <small>Powered by Resonance Health</small>	Automated AI Evolution & 3T Scanner Calibration	[Progress bar: ~60%]						
 <b>LiverSmart</b> <sup>®</sup>	Shorter Acquisition Enhancement + Steatosis	[Progress bar: ~60%]						
 <b>HepaFat-AI</b> <sup>®</sup>	Performance Upgrade	[Progress bar: ~95%]						

*“Since releasing to the market our 3T MRI machine FerriScan 60 days ago, almost 50 new MRI machines have registered for services. The dual FerriScan and CardiacT2\* package has become the standard of care in the UK, creating an immediate need for CardiacT2\* calibration on 3T. We are now validating CardiacT2\*, and FerriSmart, for 3T MRI scanners and we expect to finalize this by the end of the year.”*

Chad Tondut – GM Innovation + Development

# R&D + INNOVATION - VALUE INFLECTION POINTS

## FibrosisAssessment



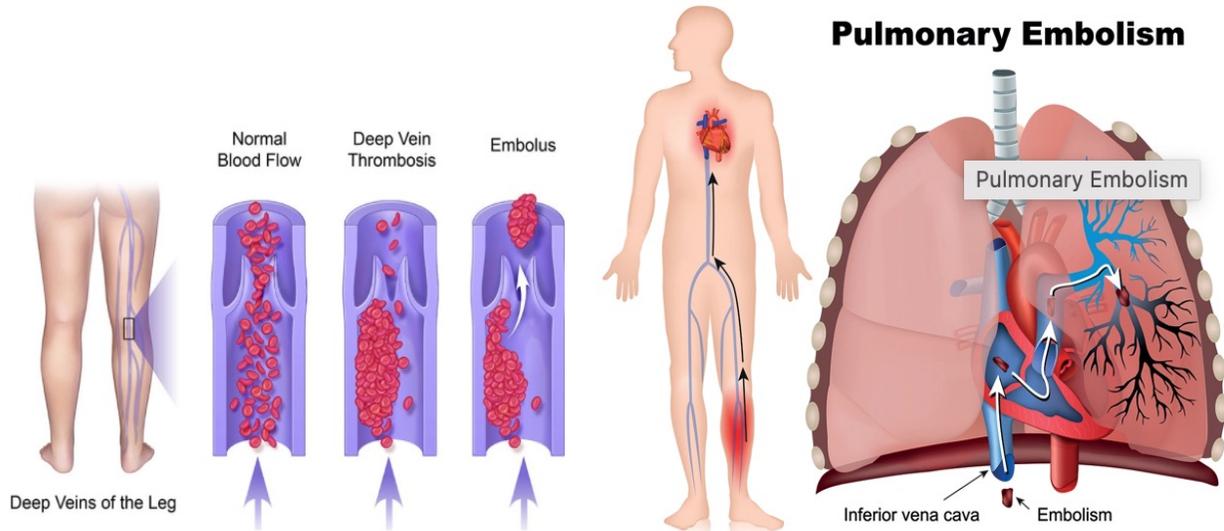
*“Resonance Health is working towards a non-invasive and standardized best-in-class assessment of liver fibrosis. Liver fibrosis aligns perfectly with our liver assessment services and with this capability we will have a truly holistic liver assessment service for clinicians and patients globally.”* Dr Wenjie Pang, Chief Scientific Officer

## LungSmart Powered by Resonance Health

AI assisted medical-software that identifies, categorizes and quantifies lung conditions including cystic fibrosis and its comorbidities and pulmonary embolism (PE), a potentially lethal blood blockage.

PE is a major cause of death, with 900K deaths p.a. in the USA alone from PE which equates to 1-2 per 1000 deaths. Preliminary discussions have been held with possible commercial collaborators active in lungs.

### FOR CYSTIC FIBROSIS AND PULMONARY EMBOLISM



# R&D + INNOVATION - VALUE INFLECTION POINTS

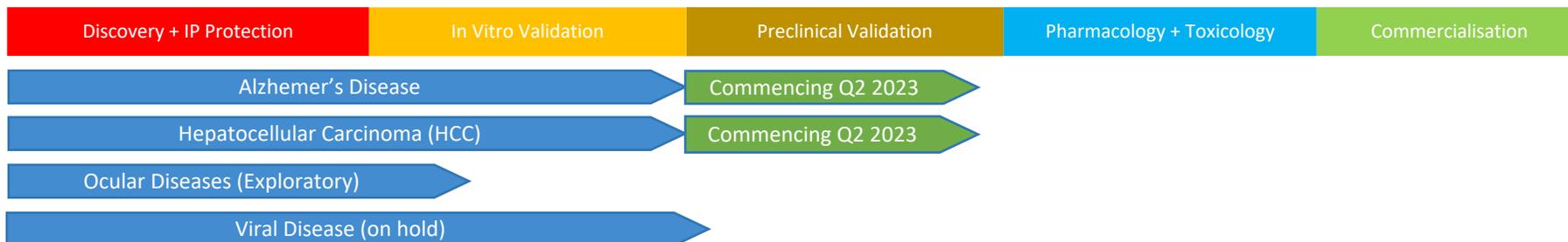
## BloodMarkerProject

The Company is developing novel blood markers with the potential to provide cost-effective assessments of iron-overload and liver-health for use in countries with limited access to MRI machines and/or when frequent cost-effective monitoring is warranted. The R&D team is analysing a combined validation set of blood samples taken from 150+ Vietnamese and Turkish patients with either Thalassemia or other iron overload disorders. In preliminary work-to-date, the results support the findings from the original discovery project. This biomarker validation work is continuing and is scheduled for completion in Q1 2023.



## ASONProject

The molecular medicine ASO (antisense oligonucleotide) R&D team has established research collaborations with The Liver Cancer Group and the Alzheimer's Disease Research Group at Curtin University. Work on the liver cancer project aims to investigate if the ASOs can suppress human cancer cell growth in a pre-clinical animal model of Hepatocellular carcinoma (HCC). In the Alzheimer's disease project, an ASO developed to increase neuronal survival, will be tested in a mouse model of Alzheimer's disease. In-house testing of this novel ASO in various neuronal cell disease models is expected to generate data relevant to other serious brain disorders such as Parkinson's disease (PD), Traumatic Brain Injury (TBI) and motor neuron disease (MND).



# FY2022 HIGHLIGHTS

## Clinical Trials

- Clinical trials valued at A\$2.1M contracted including first service contract for HepaFat-AI
- Entered China through first pharma service contract signed with a Chinese pharma
- **Post Period:** contracted for two new clinical trials with combined value of A\$1.5m

## Imaging Services Partnerships

- AI distribution agreement signed in India enabling entry into the very large Indian market
- Partnered with Thalassaemia International Federation (TIF) for FerriSmart in new markets
- Channel partners and distribution networks for AI assisted services reinvigorated

## Product development + R&D

- LiverSmart, iron and fat analysis, developed and US FDA regulatory clearance obtained
- CPT code eligibility confirmed for LiverSmart, a key reimbursement milestone in the US
- Two new PCT patent applications filed for novel approaches in molecular medicine R&D

## Team + Strategy

- Business Development and Sales personnel appointed in existing and key new markets
- Initiated studies investigating clinical benefits of FerriSmart + LiverSmart in patient outcomes
- **Post Period:** Resonance Clinical initiative launched targeting prolific global clinical trial market





*"Expanded capabilities, improved commercial outcomes"*



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# APPENDIX – DESCRIPTION OF DRY + WET LAB

## WET LAB

*A wet lab is one where drugs, chemicals, and other types of biological matter can be analyzed and tested by using various liquids.*



## DRY LAB



*A dry lab environment focuses more on applied or computational mathematical analyses via the creation of computer-generated models or simulations.*



### Life Science Focus

Activities include tissue culture, pathology, cell biology, molecular biology, organic chemistry, and physical chemistry



### Liquid Analysis & Experimentation

Experiments conducted in a wet lab typically involve liquid substances



### Additional Features

Features include drain and vent services, chemical fume hoods, and materials wholly resistant to chemicals and bacteria



### Controlled Environment

Able to test new technologies and products in a controlled environment without risking the safety of patients



### Calculations and Research

Dry labs are designed primarily to perform any kind of computational or applied mathematics to solve complex problems



### Laboratory Equipments

Usually equipped with electronics, large instruments, or dry materials that need to be stored.



### Computer-Assisted Experiments

Experiments include text interpretation, coding, ground theory methodology for the analysis of certain data, and quantum state analysis.



### Cost-Effective & Accessible

Benefits include very low costs, access to high-end equipment, the ability to perform extensive networking, access to a community of professionals, and many shared resources.

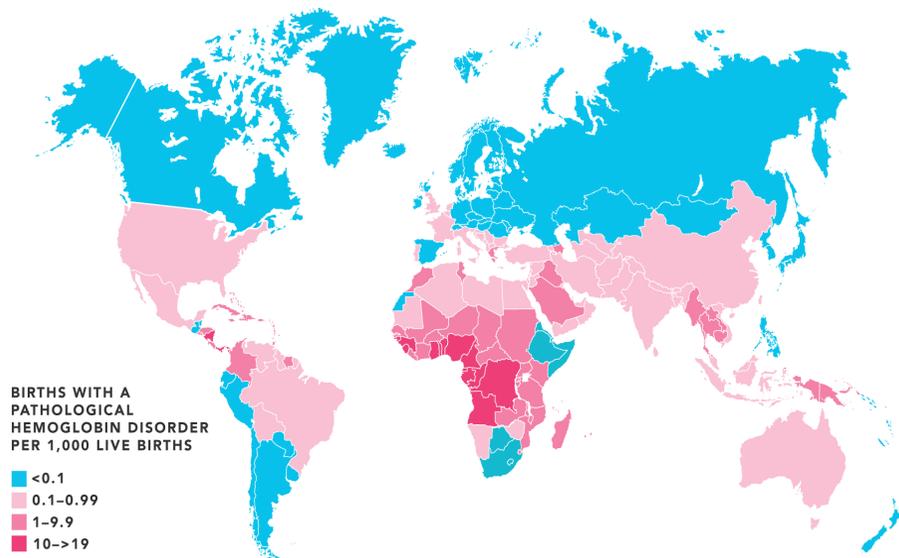
<https://www.universitylabpartners.org/>

Source: <https://universitylabpartners.org/>

# APPENDIX - GLOBAL PREVALENCE OF DISEASES

## MAIN DISEASE FOCUS AREAS

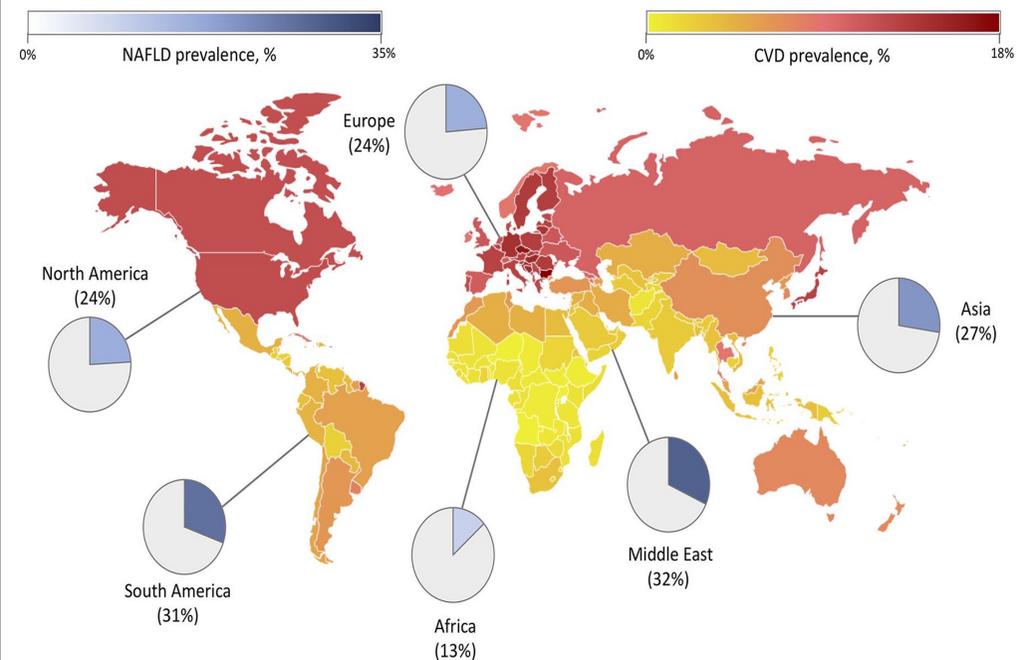
### PREVALENCE OF IRON-OVERLOAD DISEASES



\*Source: World Distribution, Population Genetics and Health Burden of the Hemoglobinopathies. Thomas N Williams and David J Weatherall, Cold Spring Harb Perspect Med 2012;2:a011692

- 250M gene carriers of haemoglobin disease
- 400K infants born p/a with haemoglobin disease

### PREVALENCE OF FATTY LIVER + CARDIOVASCULAR DISEASES



\*Source: Nonalcoholic fatty liver disease and cardiovascular diseases phenotypes, Giandomenico Bisaccia et al, SAGE Open Medicine Volume 8: 1-15, 21 May 2020

- 1 billion worldwide with fatty-liver-disease
- Cardiovascular disease is leading cause of NAFLD death