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What is sudden CARDIAC DEATH?

- Sudden, unexpected death. A loss of heart function.
- Body's organs can't receive any oxygen due to an irregular heart rhythm.
- The person becomes unconscious.
- Without immediate treatment, sudden cardiac arrest can lead to death
- Responsible for half of all heart disease deaths.

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Criteria for SCD CLINICAL Risks

Risk factor &Trigger

- Heart Failure
- Hypertrophic cardiomyopathy
- Hipertension
- Hypercholesterolemia
- Smoking
- Diabetes Mellitus
- Unhealthy Diet
- Physiological Stress
- Physical Activity

Molecular Biomarkers

Genetic + Other Molecular Biomarker + Protein

Symtoms

- Fainting (losing consciousness).
- Racing heartbeat.
- Chest pain.
- Dizziness.
- Shortness of breath.
- Feeling sick to your stomach and throwing up.

Clinical Laboratory Test

- ECG (electrocardiogram)
- Blood tests
- Echocardiogram
- Ejection fraction
- Chest X-ray
- Nuclear scan
- Cardiac catheterization

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EPIDEMIOLOGY:

How common is sudden cardiac death in young people?

- Most frequently in adults in their mid-30s to mid-40s.
- Occurs while playing team sports.
- It happens more often while running or jogging.
- leading cause of death in young athletes.
- About 1 in 50,000 to 1 in 80,000 young athletes die each year.

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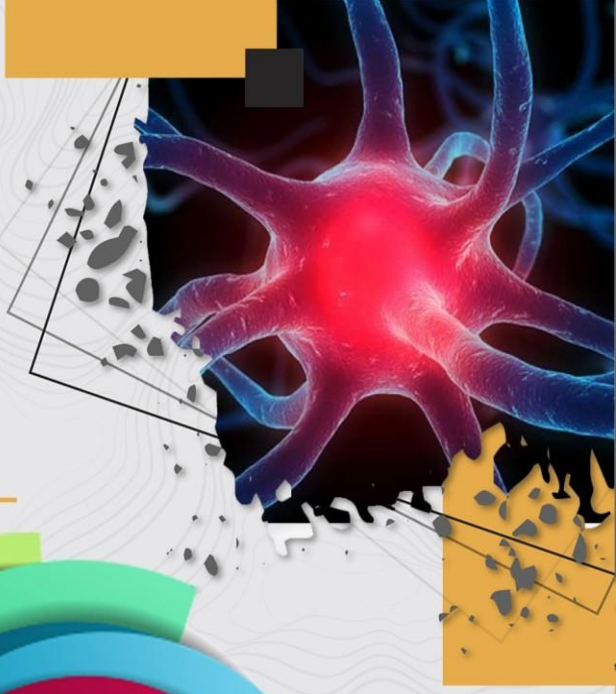
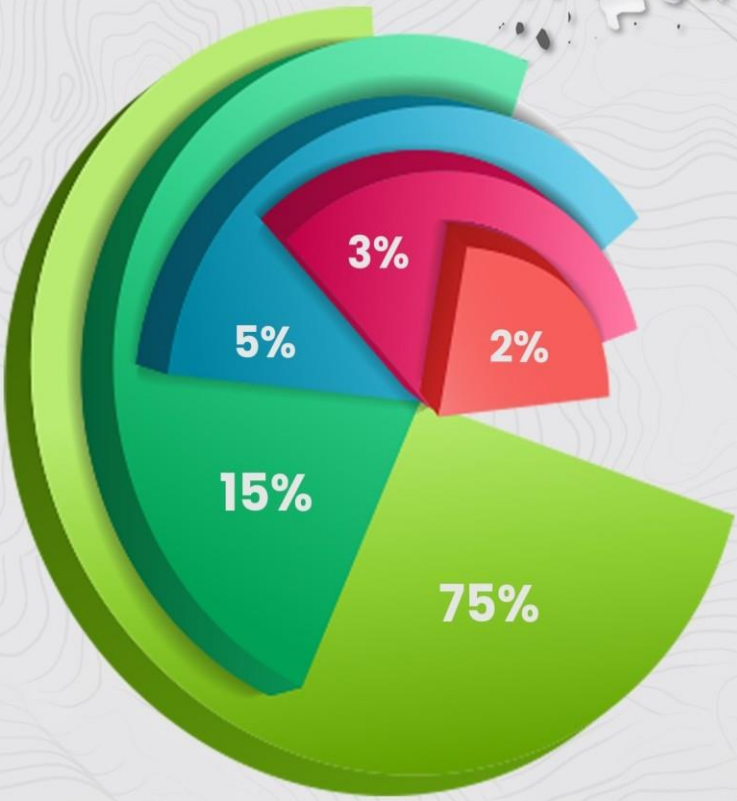


SCD ETIOLOGY



- Coronary Heart Disease
- Cardiomyopathies (DCM, HCM, ARVC)
- Inherited arrythmia syndromes (LQT,BrS,CPVT,ERS)
- Valvular heart disease
- Others

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Diseases can cause SCD

- Congenital Heart Disease (CHD)
- Cardiac Channelopathies
- Long QT Syndrome (LQTS)
- Short QT Syndrome (SQTS)
- Brugada Syndrome (BS)
- Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)
- Cardiomyopathy
- Hypertrophic Cardiomyopathy (HCM)
- Dilated Cardiomyopathy (DCM)
- Restrictive Cardiomyopathy (RCM)
- Arrhythmogenic Right Ventricular Dysplasia (ARVD)
- Left Ventricular Non-Compaction (LVNC)
- Familial Hypercholesterolemia (FH)

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Who should be screened for Sudden CARDIAC DEATH?

- Family history of SCD at a young age (under 50 years old)?
- Already been diagnosed with genetic heart disease and are worried about the implications of this for your children?
- If your family been diagnosed with myocardiopathy or channelopathy?

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Why do you need genetic testing for Sudden CARDIAC DEATH?

- Around 20% of Cardiac cases are diagnosed based on genetics.
- Improve patient treatment, management, and target surveillance for cardiovascular complications
- If an individual carries a disease-causing variant associated with a heritable risk to develop cardiomyopathy.
- Implement an effective treatment plan and offer you support and guidance.

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Here is the solution,

With DrSeq SCD®

- Drseq SCD® covers 151 genes and regions associated with cardiovascular conditions
- Capture a target size of 3 Mb.
- You will know, through your genetics, whether you are at risk of suffering from genetic sudden cardiac death.
- Family heart disease affects one in every 400 individuals in the general population and a genetic cause can be found in 50% of cases.

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Genes to be covered in

DRSEQ SCD® PNL

ABCC9, ACTA2, ACTC1, ACTN2, ADAMTS2, AKAP9, ALPK3, ANK2, ANKRD1, ANO5, ASPH, B4GALT7, BAG3, BGN, CACNA1C, CACNA1D, CACNA2D1, CACNB2, CALM1, CALM2, CALM3, CALR3, CASQ2, CAV3, CBS, CCM2, CHST14, COL1A1, COL1A2, COL3A1, COL5A1, COL5A2, CRYAB, CSRP3, CTF1, CTNNA3, DES, DMD, DSC2, DSE, DSG2, DSP, DTNA, EFEMP2, ELN, EMD, EYA4, FBLN5, FBN1, FBN2, FHL1, FHL2, FKBP14, FKTN, FLNA, FLNC, FOXE3, GATA4, GATAD1, GJA5, GLA, GPD1L, HCN4, HTRA1, ILK, JPH2, JUP, KCNA5, KCND3, KCNE2, KCNE3, KCNE5, KCNH2, KCNJ2, KCNJ5, KCNJ8, KCNQ1, KRIT1, LAMA4, LAMP2, LDB3, LMNA, LMNB2, LOX, MAT2A, MED12, MFAP5, MIB1, MYBPC3, MYH6, MYH7, MYH11, MYL2, MYL3, MYLK, MYLK2, MYOT, MYOZ1, MYOZ2, MYPN, NEBL, NEXN, NOTCH1, NPPA, NSD1, PDLIM3, PKP2, PLN, PLOD1, PRDM16, PRKAG2, PRKG1, RANGRF, RBM20, RYR2, SCN1B, SCN2B, SCN3B, SCN4B, SCN5A, SCN10A, SGCD, SKI, SLC2A10, SLC8A1, SLMAP, SMAD3, SMAD4, SMAD6, SNTA1, TAZ, TBX20, TCAP, TGFB2, TGFB3, TGFBR1, TGFBR2, TMEM43, TMPO, TNNC1, TNNI3, TNNT2, TNXB, TPM1, TRDN, TRIM63, TRPM4, TTN, TTR, TXNRD2, VCL.

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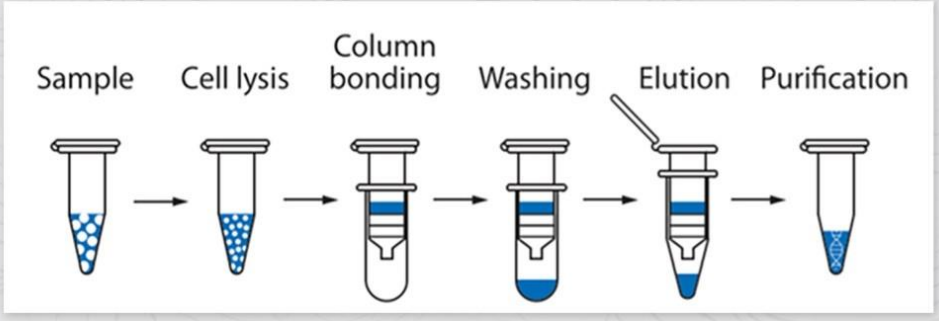
Work flow of DRSEQ SCD®

Experimental Workflow: (i) DNA Extraction



Blood Samples

Genomic DNA from Peripheral Blood

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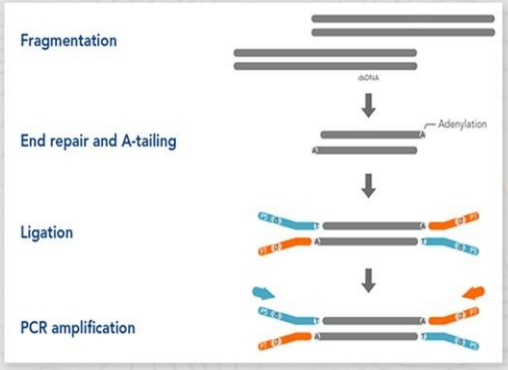
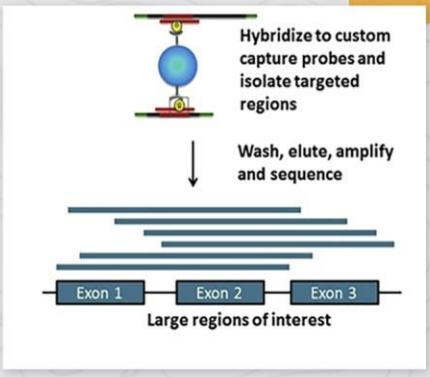
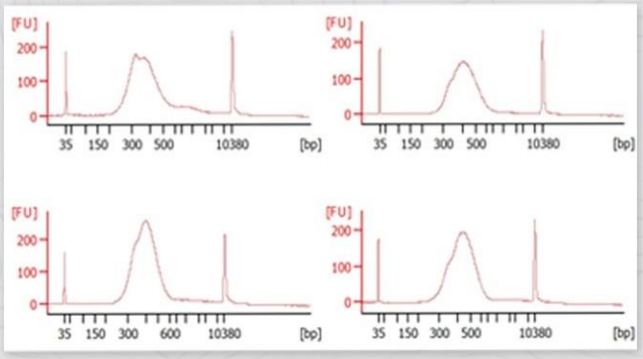
Experimental Workflow:
(ii) Library Preparation





Library Preparation

Hybrid Capture and Amplification



Quantification

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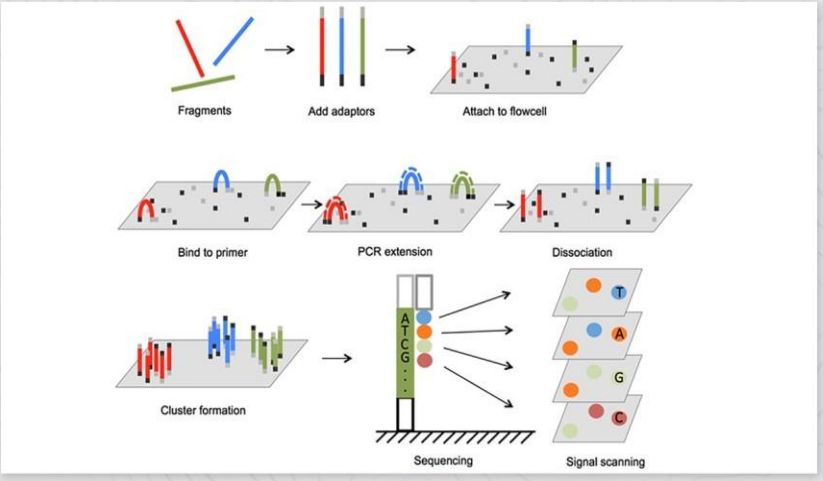
Experimental Workflow:

(iii) Sequencing

Sequenced using Illumina NovaSeq 6000



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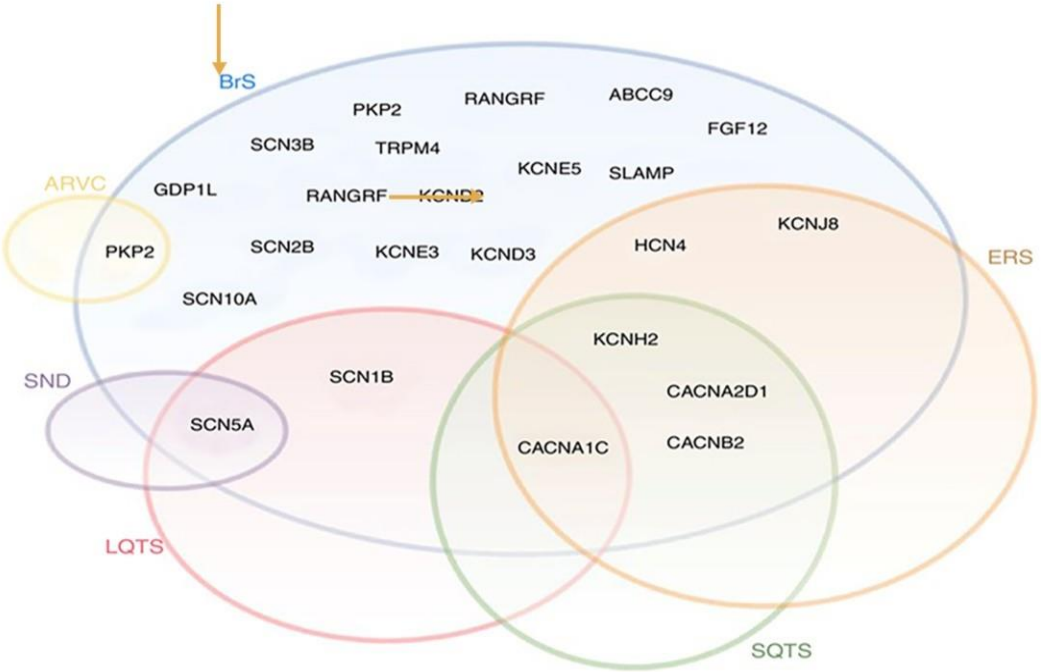
Genes association with SCD



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How to explore DrSeq SCD® PNL

Research R&D field

Healthcare Marketing Strategies

Exploration of SCD

Awareness of the test

Hospitals and clinics

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