



**Zend Technologies**

*Bringing Cognitive Wellness to  
Main Street*

## Background

- Over 6 years of research at Georgia Tech and Emory
- Investments - Over \$3.5M in grants and other sources
- Experienced Management Team
- Achievements
  - ✓ Clinical Studies (3)
  - ✓ Patent Submission
  - ✓ Primary and Secondary Market Research
  - ✓ Prototype development completed
- Member of Advanced Technology Development Center (incubator)
- Recent Recognition
  - ✓ Neurology Magazine – Device Review
  - ✓ CNN – Dr. Sanjay Gupta
  - ✓ Business Chronicle Health Care Heroes Award
  - ✓ Buzz of BIO
  - ✓ Business Week Design competition finalist



**5.3**  
million

Americans currently have Alzheimer's Disease (AD) <sup>1</sup>

**16**  
million

Americans are estimated to have AD by 2050 <sup>1</sup>

**33**  
percent

of Americans have a friend or family member with AD <sup>2</sup>

**\$100**  
billion

annual impact of AD (US)

**80**  
percent

of adults think it's important to plan ahead for the possibility of getting AD <sup>2</sup>



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Sources: 1) Alzheimer's Disease, Mayo Clinic: 2) US Adults Fear Alzheimer's More Than Heart Disease, Diabetes or Stroke, But Few Prepare, MetLife Foundation, 2006 3) Alzheimer's Special Report, AARP, 2008 4) Alzheimer's Foundation of America

## The cost of AD drives the need of Cognitive Health Assessments

- Yearly **cost of caring for one Alzheimer's patient ranges from \$18,400 to \$36,100**
- Average direct cost of caring for an Alzheimer's patient from **diagnosis to death is \$174,000**
- The **annual cost for an assisted living facility is \$34,860**, and the cost of a private room in a nursing home is **\$74,095** per year.



# An Innovative Approach to Cognitive Health Assessments

- IMTech™ – Immersive neuropsychological testing platform
- DETECT™ - Cognitive Health Assessment software

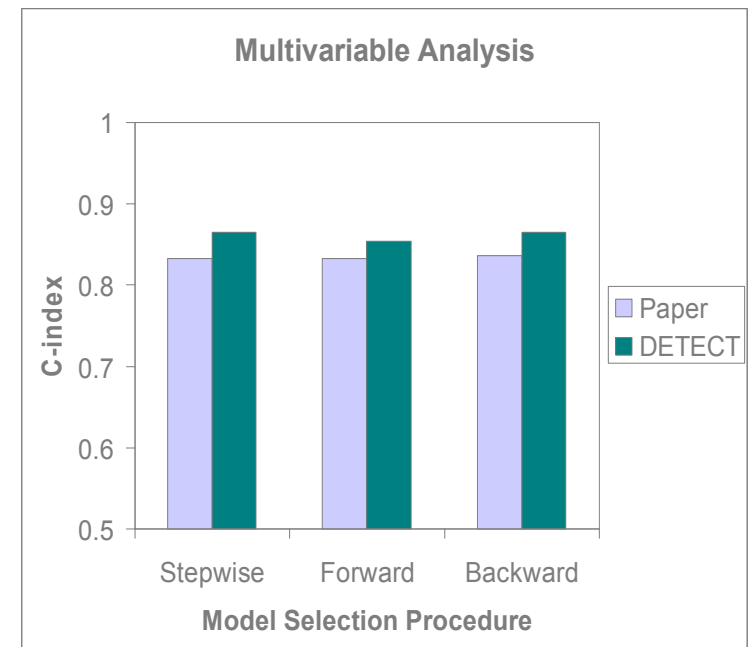


- Immersive
- Quick (ten minutes)
- Accurate (as gold standard)
- Objective
- Reimbursable
- Patent pending
- Currently Non-FDA regulated



## Clinical Research

- **Conducted by Emory University**
- **Indicates DETECT is as accurate as standard neuropsychological testing in both 40 patient and 400 patient studies**
- **The 40 patient abstract was published last year and presented. The main 40 patient paper is under revision.**
- **The abstract for the for 400 paper was published in May edition of the Academic Emergency Medicine Journal. The main paper is in process.**



## Most widespread, deadly diseases have screening standards...

Deadly Disease

US Deaths Per Year

Standard Preventative Test

**Breast  
Cancer**

**41,491**

Yearly **mammograms** are recommended starting at age 40 and continuing for as long as a woman is in good health

**Colon  
Cancer**

**53,252**

**Colonoscopy** recommended for men and women every ten years beginning at age 50

**Alzheimer's  
Disease**

**71,599**

***standard needed***



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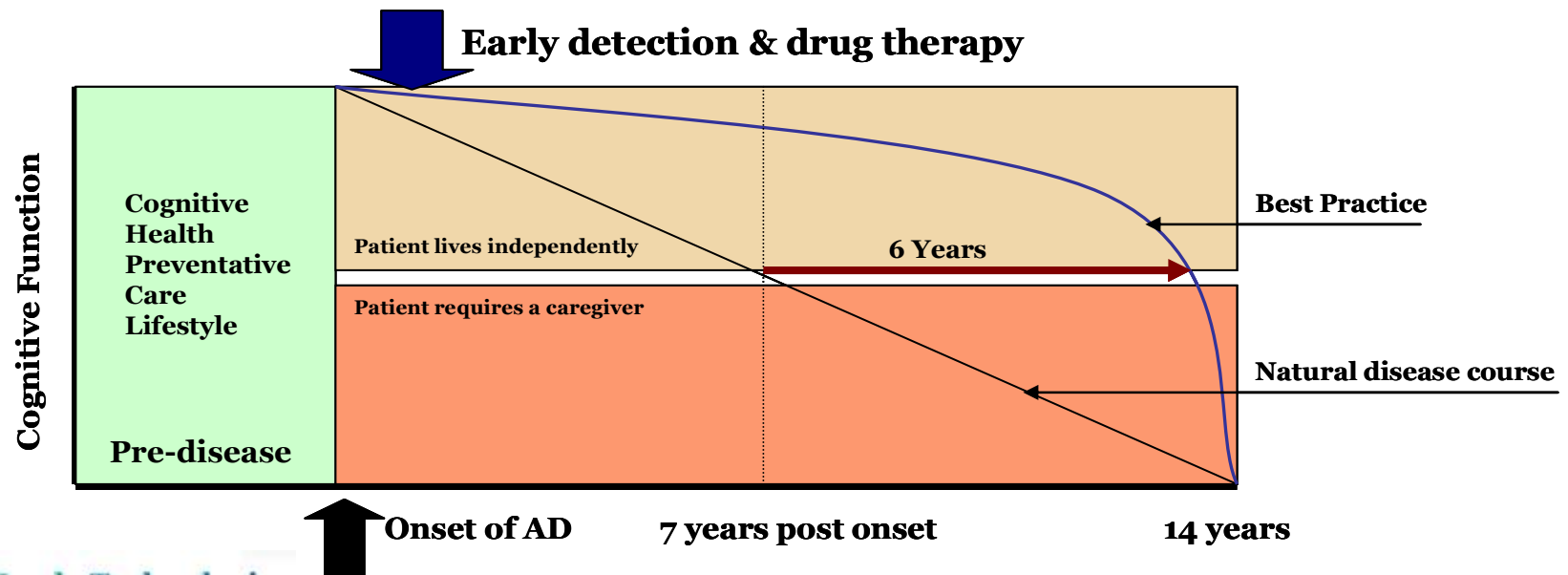
The Alzheimer Foundation of  
America says:

*‘It is irresponsible to leave the  
disease undetected to the  
extent it is now when there are  
safe tools available to increase  
earlier detection.’*



## Quality of life drives the need for Cognitive Health Assessments

- With best practice cognitive health<sup>1</sup>, Alzheimer's Disease patients can reduce their likelihood of institutionalized care from 7 years to less than 1 year
- **95%** of AD patients are **moderate to severe** when diagnosed
- US adults now **fear** Alzheimer's and its accompanying memory loss more than heart disease, stroke, or diabetes



What are best practices in Cognitive Health Care?

- Cognitive Health Plan (built with your physician)
  - ✓ control blood pressure
  - ✓ control cholesterol
  - ✓ appropriate OTC therapies
  - ✓ physical exercise
  - ✓ mental exercise
- Early Detection
  - ✓ Annual Cognitive Health Assessments
- Early use of AD drug treatment options



## Health System Benefits

- **Physicians**

- Better patient care thru delivery of cognitive care

- Early detection of pre-dementia impairment for early treatment

- New revenue stream via insurance reimbursement (CPT Code 96120)

- Easy integration with practice work flow

- Better use of drug therapies through results monitoring

- **Patients**

- Cognitive health awareness

- Early detection improves outcomes

- Peace of mind

- **Insurers/Care Givers**

- Reduced assisted living costs

- Reduced diagnostic testing costs (screen before MRI)



# Solution Overview



Annual Test



Results uploaded for processing and storage



Results available on Zenda LEHR



Therapy Initiated *as needed*

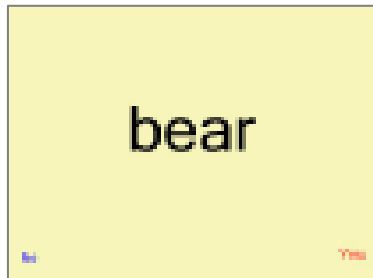


Patient Consultation/Referral  
*Lifestyle changes*

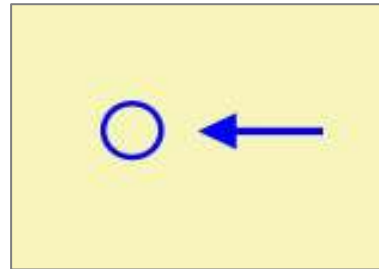
## DETECT – Cognitive Health Assessment Software

- Patients are subjected to five tests
- Derived from widely adopted neuropsychological tests
- Specifically adapted for immersive platform delivery

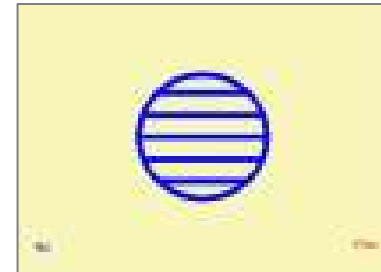
### Test Examples:



**Word Recall**



**Shape Orientation**



**Shape Recognition**



http://detect.abisoft.spb.ru/Web/pages/PatientDetail.aspx?uid=3a782904-346b-4b0c-8713-362cf25a20a5

File Edit View Favorites Tools Help

Zenka Technologies ML... Zenka Technologies -... Patient Detail

# DETECT™ NEUROPSYCHOLOGICAL TASKS

Home | Departments | Staff Users | Patients | Devices | Test Results | Reports | Setup

Full Screen

Log In/Logout  
Create/Edit  
Logout

Personal Info  
Help

Patient Information

General Information + Address Information +

Demographic Information + Residence Status +

Save Cancel Send Registration Email

Care Team + Family +

Test Results -

Type	Date/Time	Assessment	Z Score/ Sum Score	Device description	Test Set	Version	Department	Doctor
Depression	8/21/2008 1:27 PM	Results	Results viewing blocked	Automatically registered	PracticeTS	1.0		
Depression	8/21/2008 1:05 PM	Results	Results viewing blocked	Automatically registered	PracticeTS	1.0		
Depression	8/21/2008 1:27 PM	Results	Results viewing blocked	Automatically registered	PracticeTS	1.0		
Depression	8/21/2008 1:27 PM	Results	Results viewing blocked	Automatically registered	PracticeTS	1.0		
Depression	8/21/2008 3:02 PM	Results	Results viewing blocked	Automatically registered	TestSet (final edition)	111		
Depression	8/21/2008 1:27 PM	Results	Results viewing blocked	Automatically registered	PracticeTS	1.0		
Depression	8/21/2008 1:01 PM	Results	Results viewing blocked	Automatically registered	PracticeTS	1.0		
Depression	8/21/2008 1:11 PM	Results	Results viewing blocked	Automatically registered	PracticeTS	1.0		
Depression	8/21/2008 1:27 PM	Results	Results viewing	Automatically registered	PracticeTS	1.0		

Test Orders

Due Date: [ ] Text Type: [ ] Apply

Code	Type	Due Date	Comments	Assigned
TestSet (final edition)	Depression			⊗
TSLWC	MCI			⊗
PracticeTS	Depression			⊗

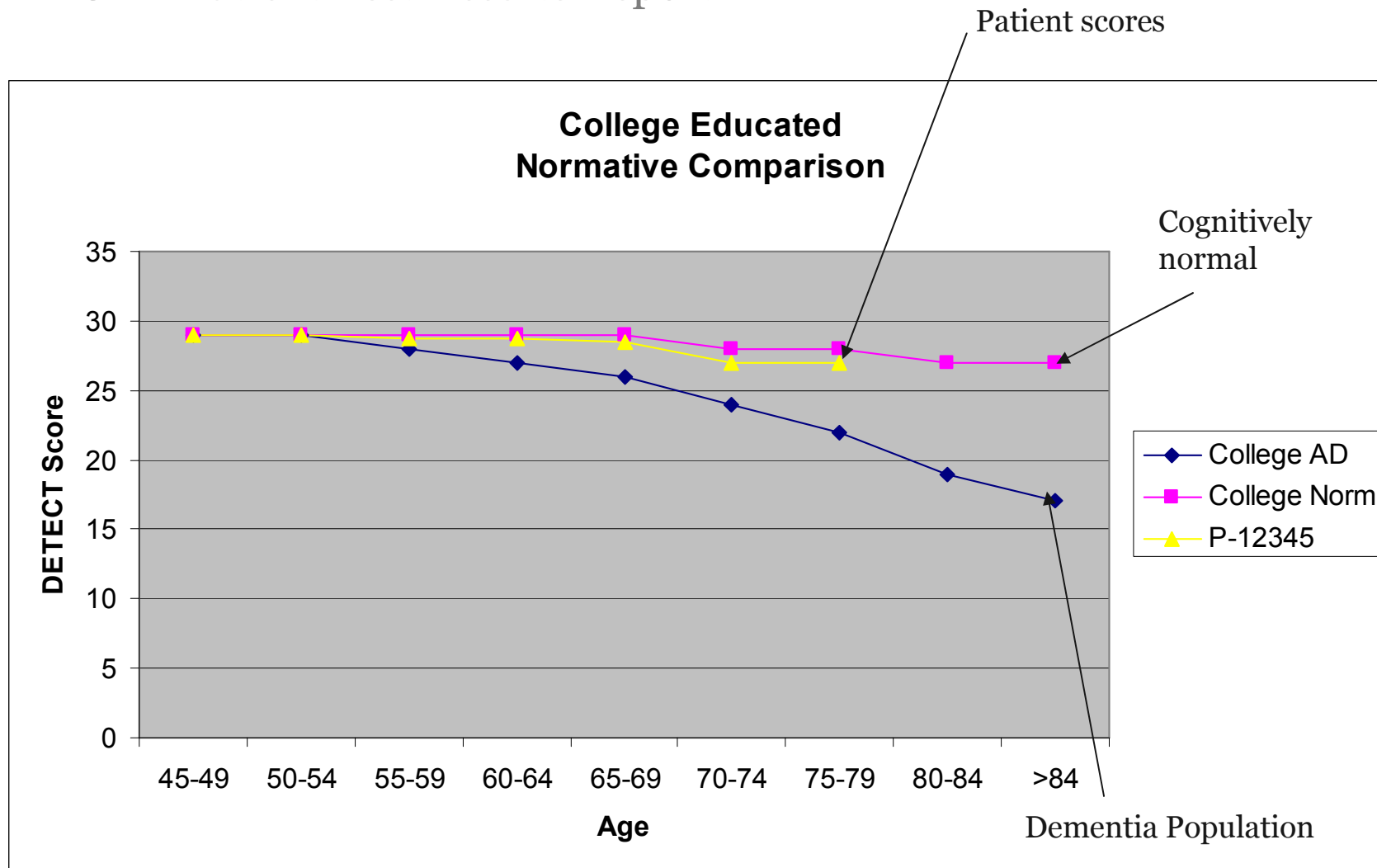
**NETWORK Services**

- Individual Reports
  - Individual History
  - Demographic Comparisons
  - Statistical Comparisons
  - Electronic Health Records
- Patient Blogs
- Care Giver Blogs
- Consultation network (doctor to doctor)
- Information Portal

start | Inbox - Microsoft... | Patient Detail - ... | Presentations | Emory 8-28-21... | Zenka info.ppt

Internet 100% | 100% | 2:00 PM | Sunday | 8/24/2008

# DETECT – Patient Test Results Report



## Competitive Advantages

<b>DETECT</b> ★	<b>Traditional NPT Testing</b>	<b>Computer Based Testing</b>	<b>Common Screens MiniCog, MMSE</b>
• Short (10 min.) ★	• Long (1 – 2 hrs.)	• Long (15 – 30 min.)	• Short (5 min.) ★
• Can be administered anywhere ★	• Requires noise-free room	• Requires noise-free room	• Common exam room ★
• Does not require physician to deliver or score ★	• Requires physician	• Does not require physician to deliver or score ★	• Requires physician
• Simple to take ★	• Laborious	• Requires keyboard skills	• Simple ★
• Objective ★	• Subjective	• Objective ★	• Subjective



THANK YOU!



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