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# Tackling anxiety in autistic people: the Molehill Mountain app

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National Institute for  
Health Research

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## Molehill Mountain supported by



DISCOVER

Funded by **Autistica** with support from

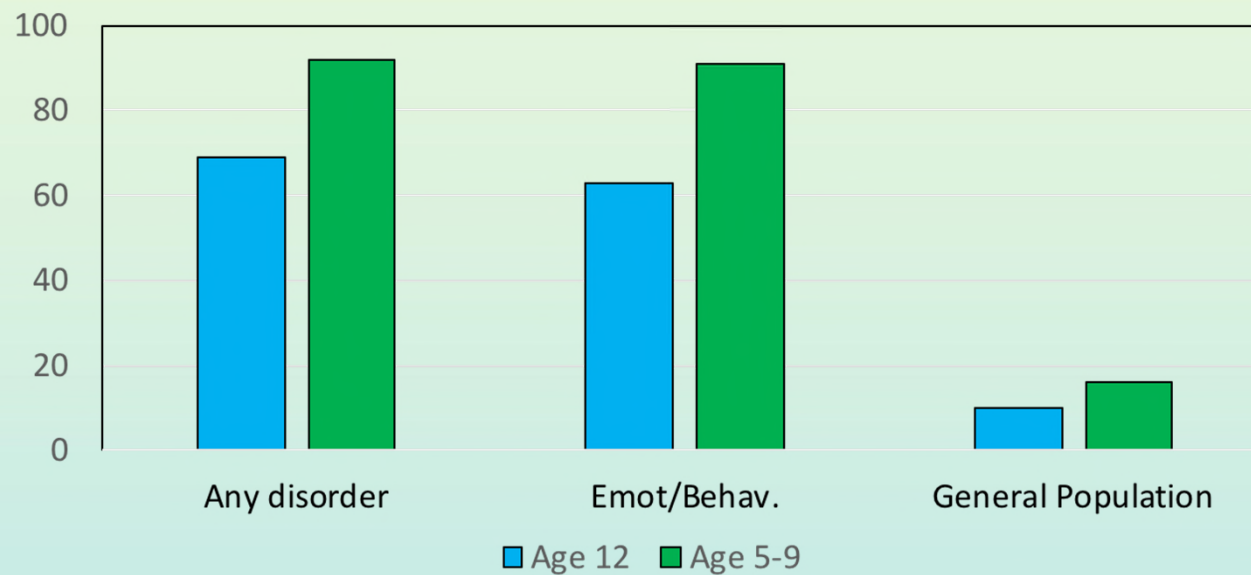
- The Maudsley Charity
- The Worshipful Company of Information Technologists' Charity
- The Pixel Fund





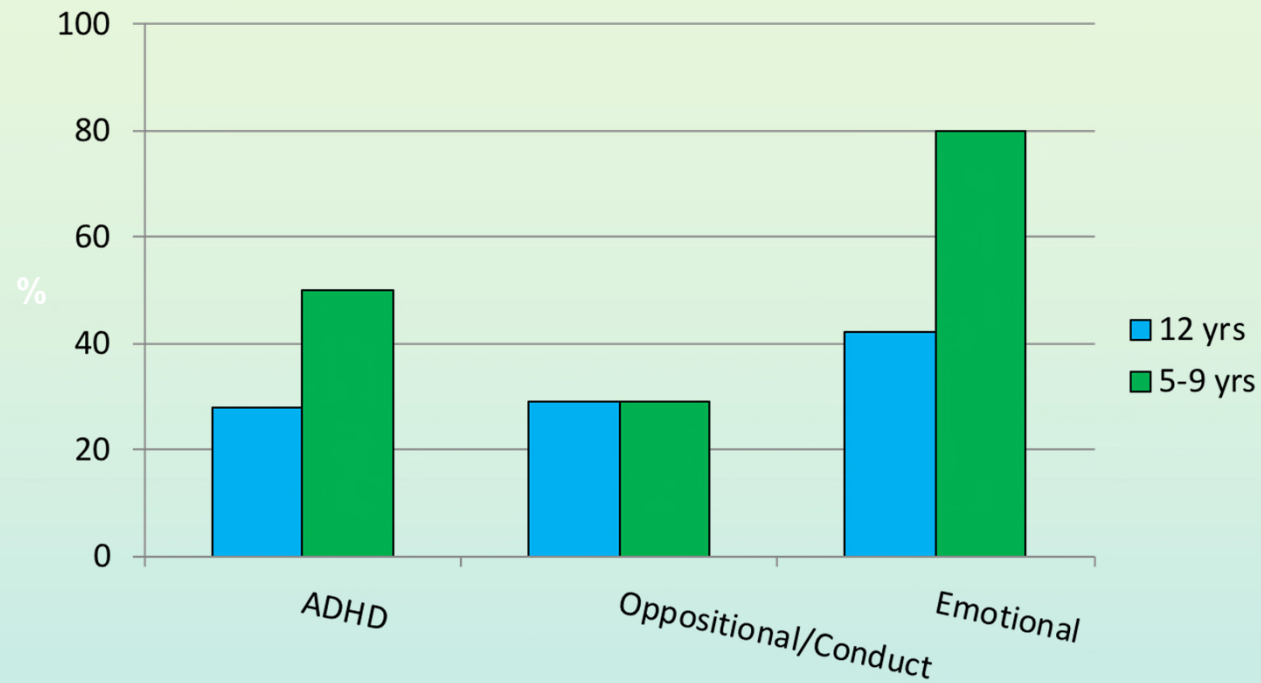
## Increased mental health problems in autistic people

Rates increased 5-8 fold



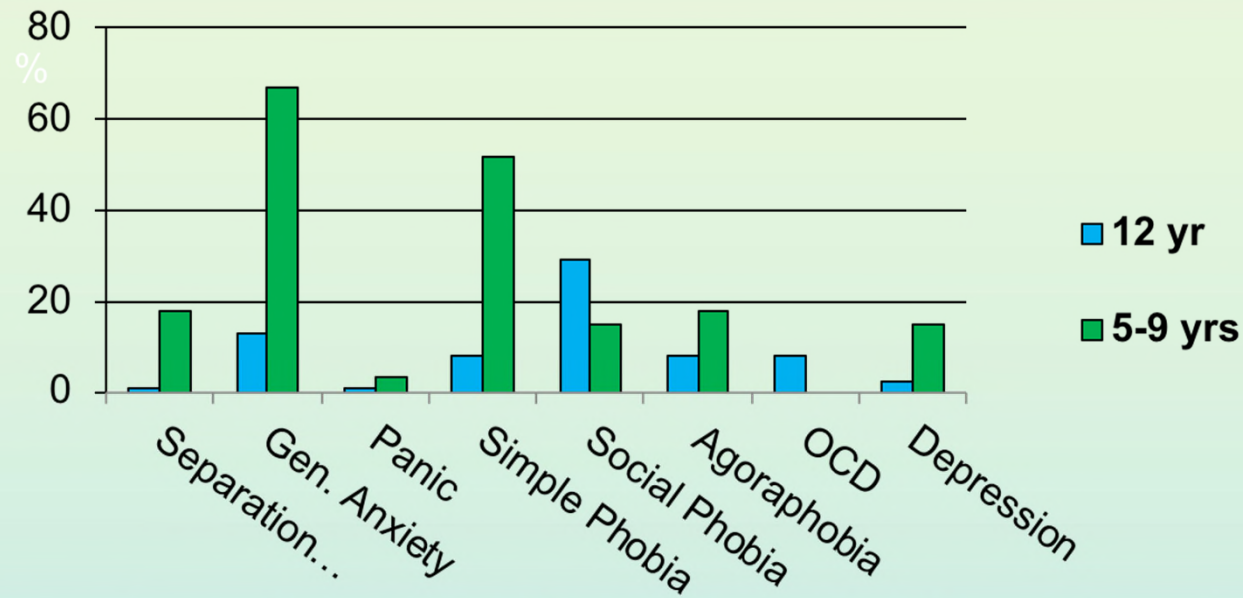


## What disorders affect autistic children?





## Emotional disorders in autism





# National recommendations for clinicians

Consider whether the child or young person may have any of the following as a coexisting condition and carry out appropriate assessments and referrals

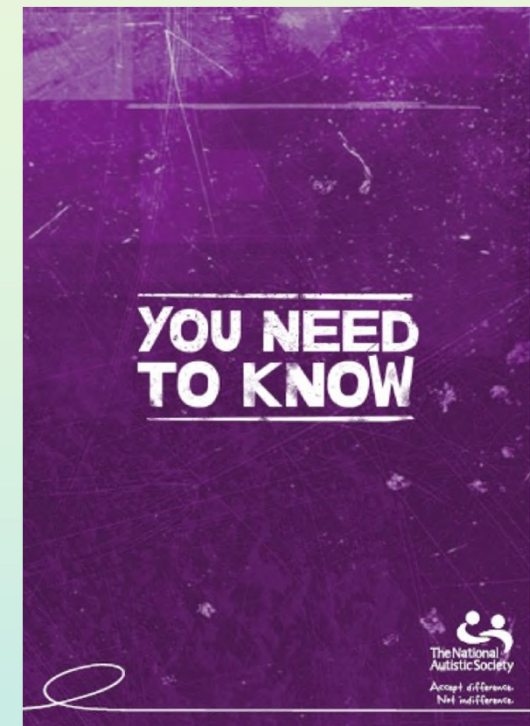
- ADHD
- anxiety disorders and phobias
- mood disorders
- oppositional defiant behaviour
- tics or Tourette Syndrome
- OCD
- self-injurious behaviour



## NAS survey of CAMHS

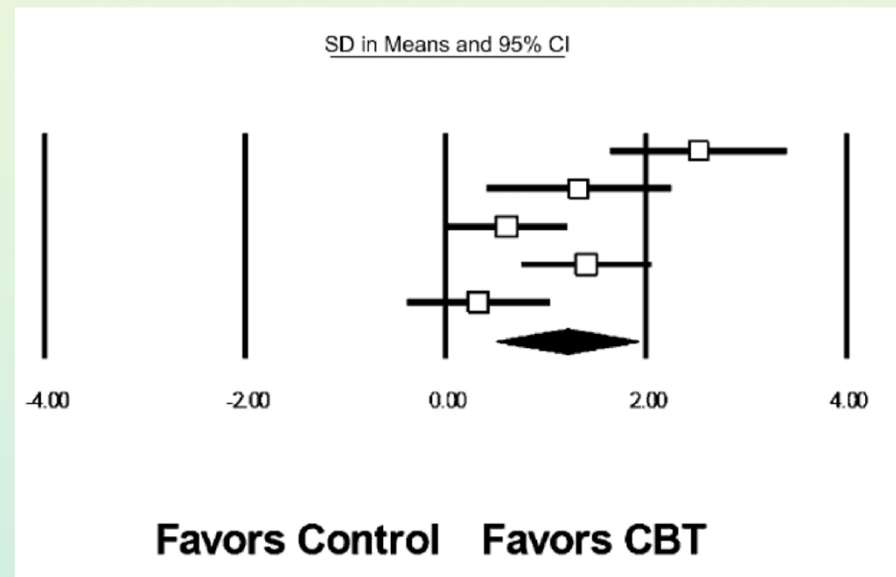
### Not autism friendly or knowledgeable

- 44% of parents reported difficulty of getting a CAMHS referral for their autistic child
- only 46% of parents think CAMHS staff know how to communicate with their children
- parents are twice as likely to report mental health improvements for their child if s/he has seen an autism specialist





## CBT is effective for anxiety in ASD



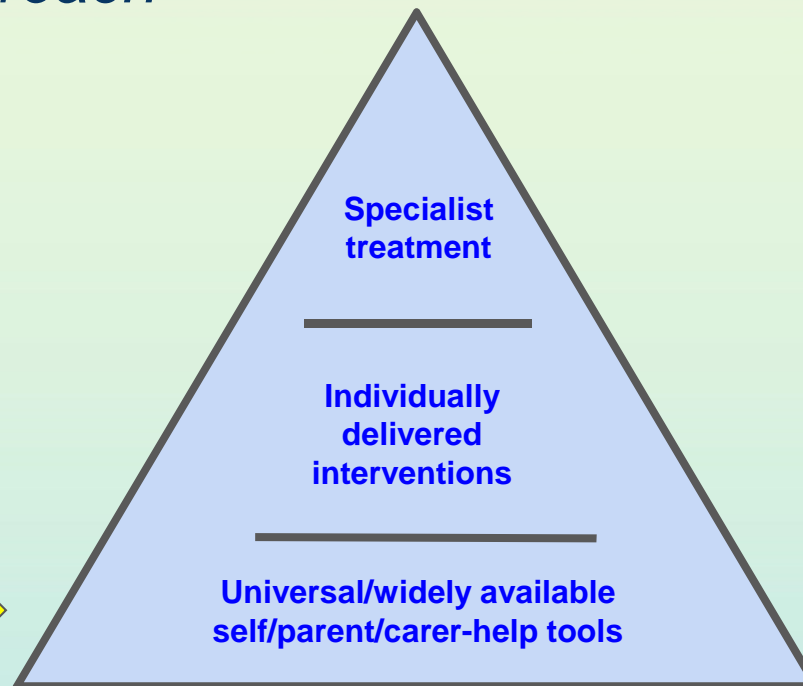
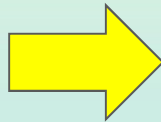
Sukhodolsky, D. G., et al. (2013). [Pediatrics132\(5\): e1341-e1350](#)





## Improving mental health for all autistic people: *a stepped care approach*

Toolkit and  
Molehill Mountain app





# MANAGE: a psychoeducation toolkit

## Feedback:

- information very valuable
- tips for managing anxiety good but sometimes hard to remember in the moment
- more than 1 month needed to implement
- younger adolescents found it more difficult to use
- manual is unwieldy - want something more flexible, individualised and portable

### Co-authors

Ann Oszivadjian  
Rachel Kent  
Sophie Carruthers  
Livvy Bridge

### Versions

Child  
Adolescent/young adult  
Parent/carer

## Learning about my worries & how to manage them

An education guide for people with ASD



**KING'S**  
College  
LONDON

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With knowledge comes understanding

South London  
and Maudsley **NHS**  
NHS Foundation Trust

Guy's and St Thomas **NHS**  
NHS Foundation Trust

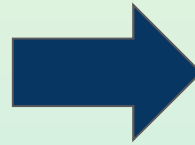
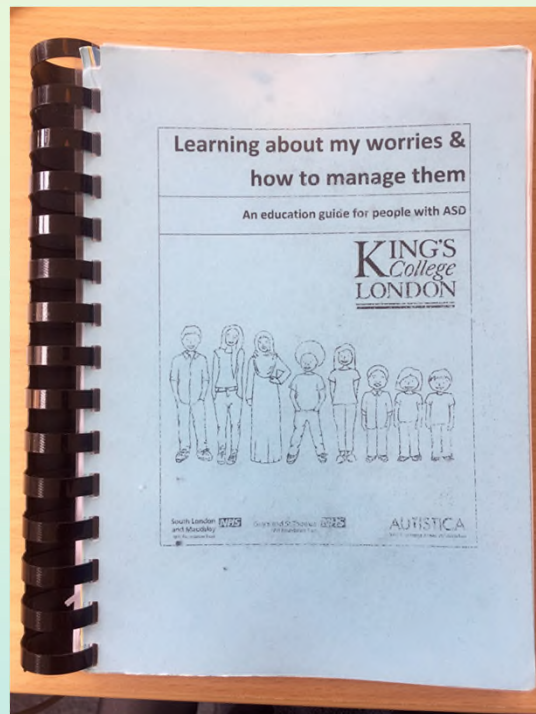
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# Transforming the toolkit into an app



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## Deutsche Bank Hackathon





## Developing Molehill Mountain

We worked with autistic people, designers and experienced developers on Molehill Mountain to make the app easy to use, engaging, relevant and secure.

- generated user stories and mapping them to features and functions
- built a digital narrative from the evidence
- imagined the world of Molehill Mountain

### Autistic people at the heart of development

- DB sponsored workshop with technologists, research team and autistic people
- survey on app use and anxiety via social media and Discover network got 500 responses
- 3 rounds of prototype testing with 20 autistic adults
- 175 Molehill Mountain user survey responders (pre and post download)
- 10 follow up interviews



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## User testing the prototype

- improvements to interface colour/contrast
- changes to design and content to reduce ambiguity and improve usability
- implement editing for user inputs (worries and check-in)
- implement editing for pre-loaded worries and answers
- implement use of emojis in the diary
- improve speed and usability of the Molehill Mountain activity
- improve dashboard usability



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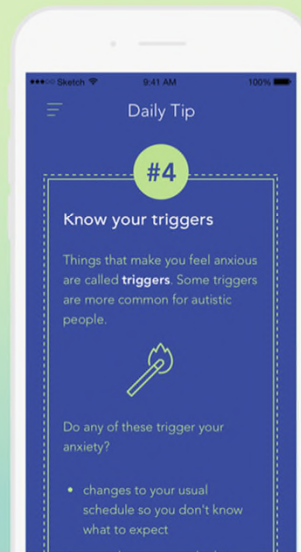
# Molehill Mountain: DEMO



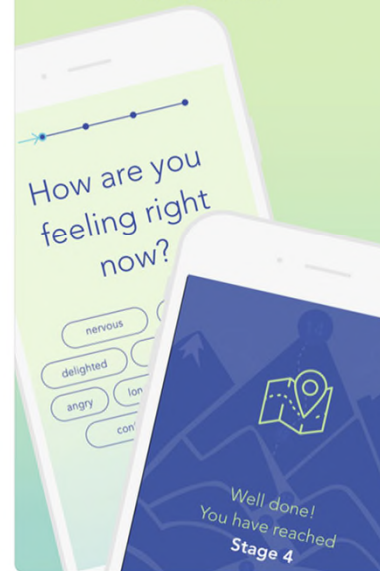
Every day, you can capture and reflect upon the things that worry you



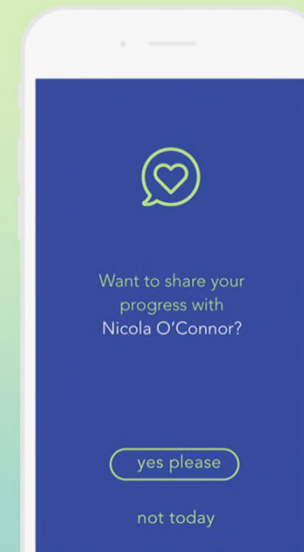
This unlocks a daily tip to learn about managing your worries better



Answer the daily tracker questions to progress up the mountain



Share your progress with a trusted friend





## Use Molehill Mountain to explore the causes and symptoms of anxiety

- track your worries and situations that trigger anxiety
- get evidence-based daily tips to understand more about anxiety
- feel more confident to self-manage anxiety

### Make Molehill Mountain part of your routine

- track your anxiety over time
- personalise the app with your worries
- complete regular check-ins at a time that suits you
- use the simple diary to capture information about your day
- review all your information through your personal dashboard
- see your progress as you climb Molehill Mountain
- share your progress with a trusted supporter to get motivation





# Molehill Mountain: Preliminary evaluation

## Post-download feedback survey

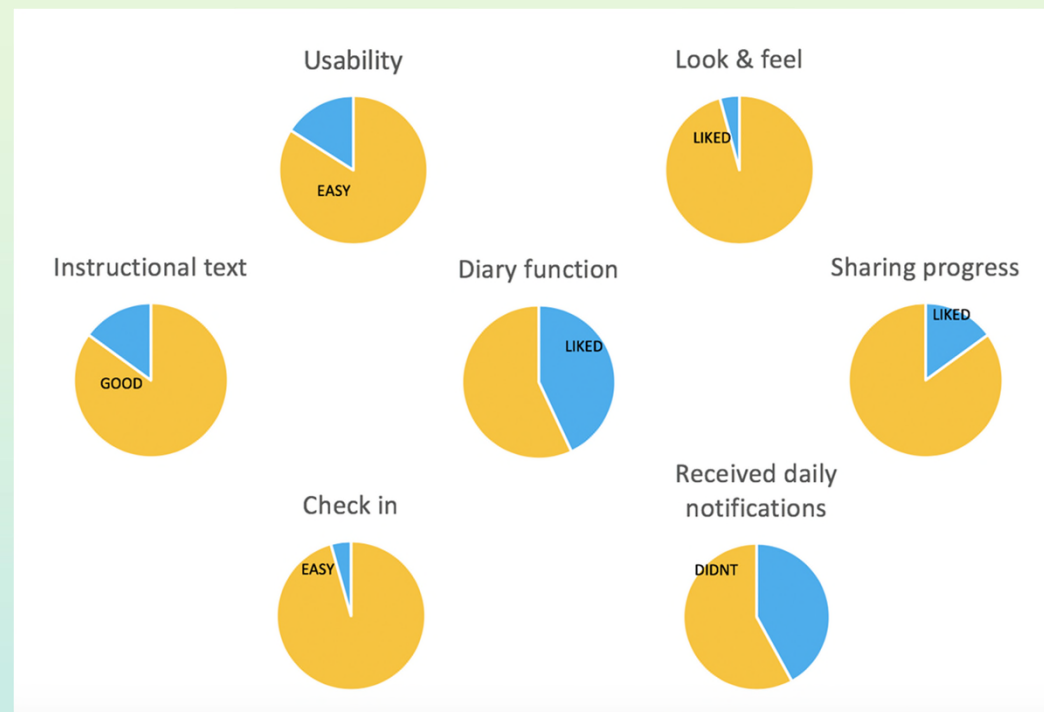
- 25 autistic
- 3 self-diagnosed
- 2 parents
- 1 works with autistic people
- 19 not known

## Follow up interviews

- 8 autistic
- 2 parents + self-diagnosed



## Initial feedback on functionality



- 85% thought the app was easy to use
- 85% thought there was enough instructional text
- 72% liked the look and feel
- 42% didn't receive daily notifications
- 90% could choose and edit worries
- 52% liked capturing worries
- 57% thought the tips were useful
- 71% said it was easy to check in
- 43% like the daily diary
- 14% liked sharing progress
- 62% found the dashboard useful



## Next steps

- Analyse qualitative interviews with those who did and didn't use the app
- 14 new tips + new mountain **\*coming soon\***
- Analyse usage data and feedback
- Design workshops to plan new features and functionality

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# Download Molehill Mountain - it's free

## Do you have an iPhone?

Download Molehill Mountain from the App Store

<https://itunes.apple.com/gb/app/molehill-mountain/id1407304564>

## Do you have an Android phone?

Download Molehill Mountain from Google Play

[https://play.google.com/store/apps/details?id=uk.co.mymolehillmountain.autistica&hl=en\\_US](https://play.google.com/store/apps/details?id=uk.co.mymolehillmountain.autistica&hl=en_US)

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# Give us your feedback

**Take our survey and tell us what you think of Molehill Mountain.**

You can be completely honest. Your insight will help us improve the app.

<https://r1.dotmailer-surveys.com/964u0rfd-1d36d44b>

**Or you can email:**

info@autistica.org.uk