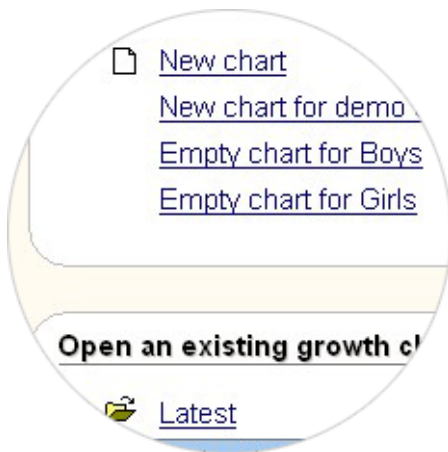


PC PAL presents GrowthXP, a comprehensive tool for monitoring growth and pubertal development from birth to maturity.

GrowthXP

Drawing on PC PAL's unparalleled experience in creating growth monitoring systems for Swedish school children, and patient management systems for specialist growth clinics in over 50 countries, GrowthXP is the complete



tool for the recording, calculation and display of auxological data.

The application accurately constructs any chart and format from population reference data so that standard national charts can be replicated* or custom designs supplied to your preferred layout.

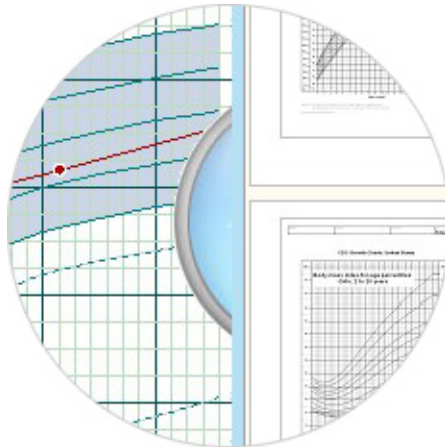
With robust SQL-based data storage, GrowthXP can be used as a standalone electronic record or integrated into pre-existing systems.

Complete growth data

Data entry field types are optimised for rapid, intuitive input, with automatic real time logical and range validations to detect typing errors.

Calculated variables

Derived information such as growth velocity, corrected target height, centile and standard deviation (z-score) transforms are calculated



automatically as observational data is entered.

Interactive charts

All data entries and calculated variables immediately update related validation displays. These can include reference population ranges providing an immediate visual comparison as new values are entered. Validation displays automatically adjust to show sufficient history plus the most recent visit.

Advanced zooming

Two unique functions facilitate easy selection of the chart area to magnify and zoom factor to apply.

High resolution

As a result of advanced PC PAL graphics techniques, growth chart displays are superbly sharp and remain so even when highly magnified. Three user selectable line drawing options optimize printed image quality.

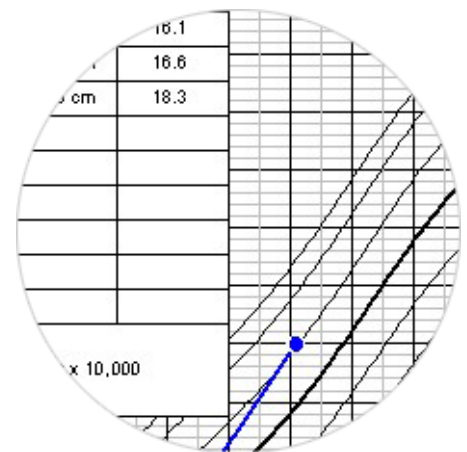
Audit trails

The Pro version automatically stores the full history of data field entries including retrospective changes and user actions. System log-ins

and log-outs are recorded in a separate file for ease of viewing.

Multi-tier technology

The systems multi-tier, "smart" client technology



creates an extremely fast, efficient and scalable application using Microsoft SQL Server.

With no client side database connection, re-requests are made to the application server for operations such as storing and retrieving data where both user and session authorizations are validated. Communication between the client and the database is encrypted.

Smart clients

GrowthXP combines proven Internet technology with the most advanced standalone client applications.

Verifications, calculations and chart-updates are instantaneous with data communications between the server and the client optimized to reduce bandwidth and accelerate response time.

Updates

At the users option, an auto-update function can identify the availability of software revisions and install them.

* Copyright permission is the responsibility of the commissioning organization.

Specifications

<p>EASY TO USE CONTEMPORARY DESIGN</p> <p>GrowthXP has a modern look and an intuitive user interface that provides for web-like navigation. Many shortcuts are pre-defined.</p>	<p>TIMELINE</p> <p>GrowthXP displays a timeline tracking visit dates and ages which can also be used to navigate from visit to visit.</p>
<p>STANDARD U.S. CHARTS</p> <p>The software includes the standard U.S. charts developed by the Center for Disease Control and Prevention, covering growth from birth to age 20 and similarly the Swedish National Board of Health and welfare 1999 and French national Carnet de Sante charts.</p>	<p>AUTO-UPDATE</p> <p>At the user's option, an auto-update function checks for and auto-installs newer versions.</p>
<p>DISEASE CHARTS</p> <p>Standard charts for Turner and Downs syndromes are available.</p>	<p>CONTROLLED UPDATES</p> <p>The auto-update function can also be run from your own server so that you have full control on the distributed versions.</p>
<p>BIRTH DATA</p> <p>Includes prematurity data as well as birth height, weight and head circumference.</p>	<p>INTERNET TECHNOLOGY</p> <p>The most advanced Internet technology handles data transport and remote data management.</p>
<p>GROWTH DATA</p> <p>Height, weight, head circumference, and leg length.</p>	<p>MULTI-TIER TECHNOLOGY</p> <p>Smart client, application server, and database server are separated for maximum efficiency.</p>
<p>PUBERTAL DATA</p> <p>Pubertal stage, testicular volume, genitalia development, breast development and date of menarche.</p>	<p>EASY CLIENT-SIDE INSTALLATION</p> <p>Our smart clients keep installation simple. No complex database drivers are installed on the client machine.</p>
<p>CALCULATED BIRTH DATA</p> <p>Birth size in standard deviationscore is automatically calculated as a function of prematurity for birth length, weight and head circumference.</p>	<p>ENCRYPTED DATA TRANSFERS</p> <p>For added security, GrowthXP uses SSL (Secure Socket Layer) technology to encrypt both data transfers and data packets.</p>
<p>CALCULATED ADULT HEIGHT</p> <p>Adult height is automatically estimated on the basis of the parents' heights.</p>	<p>USER MANAGEMENT</p> <p>User management and control is internal to the application, although the system can also be adapted to an external authorization service.</p>
<p>CALCULATED VARIABLES PER VISIT</p> <p>For each visit, several growth variables are automatically calculated, including BMI, height SDS, and growth velocity.</p>	<p>ADMINISTRATOR LOGIN</p> <p>The administrator logs in to a separate application with no access to personal data.</p>
<p>VALIDITY CHECKS</p> <p>Range checking using hard and soft limits and consistency (logical) checking as values are entered</p>	<p>CLINIC MANAGEMENT</p> <p>Data storage is highly flexible. Patient data can be grouped across multiple clinics as needed.</p>
<p>INTERACTIVE CHARTS</p> <p>All data entries immediately update related charts. Chart displays adjust automatically to include the latest visit data.</p>	<p>FULL AUDIT TRAIL</p> <p>All data changes are logged with date, time and user stamps. Previous values are stored for reference.</p>
<p>HIGH RESOLUTION</p> <p>As a result of advanced PC PAL graphics technology, graphs are superbly sharp on screen.</p>	<p>ACTIVITY LOG</p> <p>The log stores user actions (login, logout, open file, etc.) with date, time and user stamp.</p>
<p>ADVANCED ZOOMING</p> <p>Two unique functions facilitate easy adjustment of the magnification and graph area selection.</p>	<p>SQL DATABASE SERVER</p> <p>The database management system is Microsoft SQL Server using standard SQL commands.</p>

GrowthXP was developed with CodeGear Delphi 2007 and uses Microsoft-recommended multi-tier technology.

Hardware and software requirements

Smart clients:

Microsoft Windows 98, NT4, 2000, XP
 Screen resolution at least 800 x 600. 1024 x 768 or higher recommended
 Mouse, keyboard
 15 MB hard disk space
 No complex database drivers installed

Application and database server:

Windows 2000 Service Pack 4
 Windows Server 2003 Service Pack 1
 Windows Server 2003 Service Pack 2
 Windows XP Service Pack 2



PC PAL has more than 15 years experience in developing software and databases for growth data, growth charts and growth related calculations.

Growth Charts from PC PAL are often included in electronic medical record software from other suppliers and are available to more than 50.000 users world wide.

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