generate different capillary forces and ultimately result in undesired distributions (that may have a preferred direction) of the measuring medium.

In particular it was found that such a gap formation amplifies the tendency for "dewetting" i.e. a migration of the blood sample from the wetted fabric meshes and increases the sensitivity towards contaminants (e.g. glucose) present on the skin of the user. The latter effect can be due to the fact that capillary blood collected by a skin puncture forms a drop of blood at the puncture site in which contaminants are initially concentrated in the boundary area that is in contact with the skin. The "native" blood is then firstly distributed into the boundary areas of the chemical carrier due to the gap formation in the spreading fabric while the contaminated blood that flows in afterwards then reaches the central measuring spot which can impair the measuring performance.

Based on this the object of the invention is to optimize the test tape systems and the disposable test means used therein that are known in the prior art and to ensure a further improved reliability and accuracy of the measurement.

The combination of features stated in the independent patent claims is proposed to achieve this object. Advantageous embodiments and further developments of the invention are derived from the dependent claims.

According to an embodiment~~a preferred aspect~~ of the invention, an analytical test tape is provided especially for use in a test tape cassette in which the bending stiffness of the spreading fabric is modified by irregular changes in the property of the fabric threads in certain sections or locally. This allows the direction-dependent strains in the area of the application tip to be accordingly compensated for and taken into consideration in order to avoid gap formation. This can be optimized by adapting the bending stiffness of the spreading fabric in order to reduce the gap between the

spreading fabric and the reagent layer of a test field provided for the application of body fluid.

An advantageous option for such a non-isotropic, area-by-area fabric modification is for the fabric threads to have reduced thread cross-sections in places preferably by means of laser ablation or etching or mechanical removal of material.

Alternatively or in addition it is also possible that the fabric threads have a non-uniform design due to different thread materials, thread sizes, coatings or filament structures in order to modify the bending stiffness.

The bending stiffness can also be specifically adapted by locally varying the fabric geometry of the spreading fabric for example by detaching individual fabric threads.

According to a further preferred embodiment the spreading fabric is wider than the reagent layer and is supported flat on the test tape by means of spacers in the area of its protruding side edges. This allows undesired gap formation associated with fabric bending to be further suppressed.

In order to find a good compromise between an adequate minimum thickness for sample distribution and the radius of the wound up and used test tape, it is advantageous when the spreading fabric has a thickness of less than 150, preferably less than 110 µm.

An~~A further~~ aspect of the invention is based on the idea of designing the tape guide geometry and the test field structure in such a manner that gap formation between the spreading fabric and chemical carrier is substantially minimized under operating conditions. Accordingly it is proposed according to a this aspect of the invention that the application tip has a guide path which extends longitudinally to the test tape

(or in the direction of tape travel) in an arch shape and is uncurved at right angles / crosswise thereto for supporting the test tape in a kink-free manner, and that the apex area of the guide path delimits a central opening as a measuring window for an optical measurement on the test elements. The arch-shaped longitudinal curvature of the guide path or running surface enables the bending stiffness of the test elements and in particular of the spreading fabric to be taken into account by means of an evenly supporting mechanical underbody thus avoiding sharp tape bends and hence gap formation. In order to avoid displacements in the multilayer structure, the tape curvature is only in one dimension, whereas an uncurved support is achieved in the tape transverse direction. At the same time the arched shape of the guide path can also ensure a targeted sample pick-up of even very small amounts of sample at the apex and, due to the measuring window positioned there in the form of a clear opening, also enables a reduction of the required test field area.

Another improvement in this regard can be achieved by means of the fact that the arc-shaped guide path has a fixed radius of curvature preferably in the range of 3 to 5 mm, and that the guide path has a longitudinal extension in the direction of tape transport in the range of 5 to 8 mm. In this connection it is advantageous when the longitudinal extension of the guide path is the same or less than the length of the test elements which is preferably in the range of 5 to 15 mm.

The operating conditions and in particular the tape pulling force should be adapted such that the test tape under tension is supported in a planar fashion on the guide path so that the spreading fabric lies essentially gap-free on the reagent layer.

In order to avoid gap formation under the unglued central area of the spreading fabric, it is advantageous when the reagent layer viewed in the tape transverse direction is narrower than the test tape and wider than the measuring window.